Telephony.

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Telephone Weekly, Telephone Magazine, Telephone Securities, The Telephone, Sound Waves
PUBLISHED WEEKLY BY TELEPHONY PUBLISHING CORP.
608 S. Dearborn St., CHICAGO

H. D FARGO, President and Treasurer
S. R. EDWARDS, Editor and Secretary

H. D. FARGO, Jr., Vice-President and Advertising Manager
D. C. SORENSEN, Western Advertising Manager

Entered as second-class matter September 4, 1908, at the postoffice at Chicago, Ill., under act of March 3, 1879.

Volume 93
Number 11

CHICAGO, SATURDAY, SEPTEMBER 10, 1927

Subscription — 10 Cents a Copy
$3 a Year U. S., Cuba and Mexico
$4 Canada, $5 Other Countries

TELEPHONE DEPRECIATION COMES BEFORE I. C. C.

Telephone depreciation will be a live topic of discussion again in the near future. The Interstate Commerce Commission has decided to re-open the question of depreciation for telephone and railroad companies and will hold a hearing for the submission of further evidence on the question on November 9. Both the Independent and Bell groups will have representatives at this important hearing which will be held at Washington before Commissioner Joseph B. Eastman and Examiner Bunten.

The I. C. C. issued its order last November requiring all common carriers—which includes most utilities—to set up depreciation accounts. At that time the order fixed September 1, 1927, as the date for Classes A, B and C telephone companies to file an estimate of the composite percentage rate applicable to the book values of the plant as carried on the books, and required such companies to begin their accounting January 1, 1928.

Since then these respective dates have been postponed to March 1, 1928, and January 1, 1929. The new hearing, called for November 9, 1927, will afford all companies involved additional opportunity for discussion of this much-vexed question.

* * * *

As will be remembered, the issuance of the commission order a year ago developed a wide difference of opinion between the railroads, gas and electric companies on the one hand, and the telephone interests on the other. The railroads, gas and power companies favored what is known as the "retirement" reserve, to be created when the property is actually retired, while the telephone groups favored regular, periodical appropriations to depreciation accounts.

The telephone representatives have contended that the expense of furnishing service includes the cost of everything used in the process; that depreciation is an operating expense, incurred during an accounting period in using up in service items of physical property whose lives extend over more than one such period, and that this cost should be shown when it is incurred and should be charged to operating expense in periodical installments throughout this service life.

* * * *

In the report accompanying the official order, the I. C. C. showed that it leaned toward an agreement with the position taken by the telephone interests instead of accepting the "retirement" plan favored by the railroad and power companies. In one paragraph of its report the commission said:

"It is conceded that the service lives of most railroad and telephone property are terminable. It is also conceded that the consumption of these units in service is an expense of operation. The question is only whether this expense should be accounted for, in the light of the best available information, as a continually-accruing expense, or whether it should be accounted for as an expense suddenly incurred in its entirety at the time when the unit is retired. We have no hesitation in reaching the conclusion that the former method of accounting will conform more closely to the facts than the latter."

The "former" was the method favored and urged by the telephone groups.

* * * *

The reason the I. C. C. is re-opening the depreciation procedure question is because the railroads filed a petition for a rehearing July 5, citing a number of objections to the order and asking for an opportunity to submit additional evidence in support of their claims.

After deciding to grant the hearing, the commission, in fairness, has given the telephone companies notice that they also will have an equal opportunity to be heard on the matter. On September 1, C. B. Randall, counsel for the United States Independent Telephone Association, filed a statement with the commission advising that the association desires to introduce further evidence at the November 9 hearing. That date will see many prominent telephone men of both groups in Washington, and it is expected that the proceedings will be prolonged several days.

There are nine points on which the Independent association desires to present evidence, and they are listed in the statement filed with the commission as follows:

1. Relative to the "service life" to be used in depreciation accounting, and the pricing of re-usable material upon re-use after removal.

2. Relative to the treatment of charges incident to extraordinary repairs as stated in the order of November 2, 1926, and a proposal to substitute accounting by "units of property," as requested in the association petition for changes dated April 25, 1927.

3. Relative to the treatment of interest during construction and undistributed construction expenditures, station installations, interior block wires, drop wires under No. 243 exchange aerial wire.

4. Relative to the requirements of the order of November 2, 1926, as to depreciation accounting and operating expense adjustments, particularly as to clearing charges against depreciation reserve through maintenance accounts.

5. Relative to the separation of depreciation reserve accounts.

6. Relative to statements required as to deferred ordinary maintenance.

7. Relative to accounting for depreciation on leased property.

8. Relative to the statement on Page 356 of the order of November 2, 1926, that "it is essential to bear in mind, however, that there is an inseparable connection between the straight line method and the principle that accrued depreciation represented by the reserve must be deducted in ascertaining the rate basis value."

It is the contention of the Independent association that such a statement is contrary to both fact and law.

9. Relative to the requirement that when property is retired the loss in service value shall be charged in its entirety to the depreciation reserve when the cause of retirement is not a recognized factor in the accruals for depreciation.

* * * *

Compared to the statement of what the Independent telephone association desires to bring up, as has been outlined, the railroads have a much longer program of objections to argue about and suggestions to urge. Their activity in the depreciation matter is directed by the "presidents' conference committee on federal valuation of the railroads of the United States," composed of the railway presidents in all parts of the country.

Their petition shows that they are still supporting the "retirement" plan of depreciation, and still trying to induce the I. C. C. to discard the periodical installment plan favored by the telephone groups.

* * * *

In view of what the commission said in its report when the depreciation order was issued, it is difficult to see how it consistently can revise its opinion. However, the relations between the commission and the railroads are of much longer standing than the relations between the commission and the telephone industry, and, quite justly, also, the I. C. C. would not desire to do anything to affect the railway's financial position adversely.

Most people hold the opinion that unless the railroads prosper the country cannot prosper, and it is, therefore, reasonable to suppose that no government agency will intentionally take a chance on injuring them. They have had enough troubles.

COMING CONVENTIONS.

Maine Telephone Association, Portland, Falmouth Hotel, September 13 and 14.

Indiana Telephone Association, Indianapolis, Claypool Hotel, September 20, 21 and 22.

United States Independent Telephone Association, Chicago, Hotel Sherman, October 18, 19, 20 and 21.

Illinois Telephone Association, Springfield, Hotel Abraham Lincoln, November 17 and 18.

Telephone Buildings—Maintenance

Good Housekeeping Methods Should Prevail Not Only in Central Office Quarters But in General Offices, Storerooms and Garages—Routine Maintenance and General Inspections—What General Inspections Should Cover

By Theodore Adle,

Assistant Engineer, Bell Telephone Co. of Pennsylvania

Standards are advancing in every field of human endeavor. We live differently and live better. The buildings of tomorrow will make those of today seem inadequate. Our housing problems of today have changed from those of yesterday. This applies not only to housing for the home, but for business also.

For our telephone buildings we concentrate on the best locations, not only with regard to the present, but also in direct relation with a particular community's future growth. We concentrate, too, on the best grade of fireproof construction in our owned buildings, and insist on high standards in our leased or rented structures. Clean, safe buildings contribute to better telephone service in many ways.

It is, therefore, reasonable to suppose that all buildings and quarters, either owned or leased, devoted to a telephone company's business should be maintained in as perfect state of repair as practicable, and should be kept at all times in a clean and sanitary condition. Therefore, all reasonable steps should be taken to make these quarters attractive to the eye, as well as comfortable places to work in.

Good housekeeping methods should prevail not only in central office quarters, but also in general offices, warerooms, garages and other quarters used for conducting the telephone company's activities.

In obtaining a high standard of maintenance at the most economical cost, the following items should be kept in view:

1. Prevention of accidents to employes and public.
2. Preventing rapid deterioration.
3. Serviceableness.
4. Obtaining a uniform condition as to general appearance.
5. Establishment of a methodical system for cleaning and other classes of house service.

Owing to the wide variation in the kind and class of construction of owned and leased buildings, and the purpose for which they are used in connection with the telephone business, only those items common to the maintenance of the average building can be cited to serve as a guide from which those applicable to the individual case may be selected.

Considerable time and study may be given the question of care and appearance. The intervals at which buildings or certain parts thereof should be cleaned are, in all cases, proportional to their location, size and use.

1. A building located in the business section of a metropolitan area requires cleaning at more frequent intervals than one located in a residential or suburban section.

2. Certain portions of large buildings require cleaning at more frequent intervals than the same portion of smaller buildings.

3. General offices, such as commercial

quarters and others that are subject to extraordinary use, require greater attention than quarters subject to ordinary wear.

The main objective in cleaning should be to distribute the necessary work, on a periodical basis, over a definite period without interfering with the daily business routine. Furthermore, the careful attention to all matters of house service will serve to bring about the maintenance of the buildings in a more careful and orderly manner, the improvement of their appearance and the reduction in the cost of maintenance, besides familiarizing the occupants with the methods of fire protection and prevention and the establishment of proper safeguards against loss of life and property by fire.

In addition to the work performed by the janitor forces, many items, in themselves small, but in the aggregate quite large, may be taken care of by the occupants themselves.

Special attention should be given to the unnecessary burning of electric lights, running of fans and the closing of any windows where there is a possibility of damage to the building or contents, either due to rain, snow, or someone carelessly throwing a lighted cigar, cigarette or match through an open window.

In addition to the regular routine maintenance, a comprehensive annual inspection should be made of each owned and leased building in order to determine its condition, particularly in respect to certain parts, which, if not given attention at the proper time, will in many instances, lead to rapid deterioration and possibility of damage.

In these general inspections, all structures comprising the respective property units should be inspected in addition to areaways, grounds, lawns and hedges.

In making inspections of buildings, all essential features should be noted to which special attention should be given, in order that all buildings or quarters may be kept in a thorough state of repair, both inside and out.

The necessary judgment should be used, however, to strive for a common sense performance, in order that recommendations for repapering, repainting, refinishing and work of this kind which, while desirable, may be unnecessary, and, therefore, deferred; arrangements being made instead, for cleaning and continuing in service for a longer period.

It is desirable to have a person designated "Superintendent of Buildings," assume the responsibility for the maintenance of all buildings in a particular territory. He should assure himself by frequent inspections of buildings, as well as from the information gleaned from reports on building conditions submitted to him from time to time, that all buildings are properly maintained.

In connection with repairs, the superintendent upon receipt of information as to the necessity, should arrange to have the necessary work done, employing local jobbing contractors for small jobs and taking bids for larger ones.

Outstanding items to be noted on inspections should include the following:

1. Roofs and their associated trap doors, flashings, chimneys, stacks, flag poles, skylights, parapet walls, cappings and cornices. Defects in any of these parts are generally, as a rule, obvious and readily discernible.

2. Ventilators should be particularly inspected for proper operation.

3. Heating systems are especially important and should be inspected as to condition of furnace and associated piping, valves and operating tools.

4. Stairways, including fire towers, escapes and emergency exits. It goes without saying that the necessity for always keeping these portions of the building in first-class condition is of prime importance.

5. Lawns, grounds and hedges.

6. Fences.

7. Pavements and drives should be kept in a safe condition at all times, preventing the likelihood of accidents to pedestrians and the general public.

8. Entrances. In view of these particular portions of the building being used more frequently than other portions, special attention should be given:

(a) General appearance.
(b) Adequate lighting.
(c) Condition of doors and associated trimmings.

In conjunction with the adequate and efficient care and upkeep of the building plant in general, along the lines of good housekeeping, it is always essential that consideration be given to the organization and drilling of fire-fighting brigades and salvage corps.

Buildings housing materials and personnel devoted to the telephone business, without exception, also include records and files which are indispensable to the continuous conduct of the business. A partial or complete loss of available information, both current and record, surely jeopardizes the smooth performance so essential to public service.

The provision for and training of such organizations, as cited, among the personnel of the telephone company employes, is, therefore, particularly essential. However, the fostering of such organizations need work no hardships in the performance of regular duties assigned to the employes concerned, but on the other hand should do much to establish a commendable esprit de corps in safeguarding the company's property and investment.

Incidental with the organization of fire-fighting brigades and salvage corps, is the provision for organizing and conducting fire drills. These drills are primarily intended to familiarize the occupants of the respective buildings with all methods of egress. Fire drills, in order to be effective and serve the purpose for which they are intended, should be held generally at fixed stated intervals. In this way orderly exit from any building is assured under forcible circumstances.

Supplementary information concerning the conduct of fire drills should be posted in prominent places on each floor, if necessary, and should include:

(a) The floor plan.
(b) Location of exits.
(c) Route of march to each exit.
(d) Location of fire alarm boxes, if any, on the floor.
(e) Location of nearest city fire alarm box.
(f) Call number of city fire department.

The organization of fire fighting brigades should include a fire chief and assistants whose duties are to be thoroughly acquainted with the location and use of the fire-fighting apparatus provided, and the supervision of keeping such apparatus in an operative condition at all times.

In addition, the duties of its personnel should include the performance of such duties as pertain to the safeguarding of buildings and their contents from mishaps, due to the probable irregular action of outside water, gas or electric service.

The salvage corps should be charged with the responsibility of conducting the removal of records and other valuable property in case of emergency.

With the foregoing as a nucleus for the organization and conduct of a building maintenance force, we should look well to the future. Our mode of living—and this includes our working conditions—is growing better, happier and more healthful day by day. The progress we are to make depends upon our vision, foresight, determination and resourcefulness at present.

Three Lashes to Success.

My experience and my observation have taught me that there are three lashes to success: necessity, ambition and habit.

Given the same brain power, the boy who must make his way through school and college and must support a widowed mother will do more in the same time than the boy born to go to college. A rich man's son starts life under a handicap.

Necessity inspires ambition. Need begets the desire to do. And the boy who is spurred by necessity and ambition works harder than the fellow who has an easy road. Then habit keeps a man at work when necessity and ambition have lost their edge.—Charles J. Webb, President, Woolen Corp. of America.

"Telephony" Announces its Annual Prize Article Contest

Six Hundred Dollars in Prizes

During the past three years, articles by many different writers have been presented in TELEPHONY. Many of these articles were submitted for the prize article contests which TELEPHONY has conducted with a view of presenting telephone people the latest thoughts, ideas and practices of those who are actually carrying on this great industry of ours.

The telephone business is a many-sided one with peculiarities all its own. For that reason its problems, perplexities and practices can be adequately written about only by telephone people. It takes a practical telephone worker to talk telephone "shop."

TELEPHONY offers to telephone people cash prizes for articles relating to telephone work, apportioned to the four general divisions of the industry, as follows:

General or Executive Subjects:		Plant or Construction:	
First prize	$75.00	First prize	$75.00
Second prize	45.00	Second prize	45.00
Third prize	30.00	Third prize	30.00
Traffic or Operating:		**Commercial or Business:**	
First prize	$75.00	First prize	$75.00
Second prize	45.00	Second prize	45.00
Third prize	30.00	Third prize	30.00

The contest is open to men and women of the telephone field. The practical value of an article to TELEPHONY'S readers, rather than the construction and phraseology, is a factor given weight in judging the merits of an article.

Articles should be typewritten, on one side of the paper only, and double-spaced. Photographs, pencil sketches or diagrams help to illustrate an article and make it more interesting. Articles of from 1,800 to 3,600 words are usually sufficient to tell an author's story.

Articles submitted in the contest which do not take prizes will be considered for publication in TELEPHONY at the regular rates for contributions.

Contest closes November 21, 1927. Start getting your ideas into form now.

Stanley R Edwards
Editor.

Hardening of Lead for Cable Sheath

Use of Lead-Antimony Alloy in Cable Sheath Makes Sheath More Resistant to Corrosion and Several Times as Strong as Commercially Pure Lead—The Crystal Structure of Lead-Antimony Alloys—Crystals and Hardening of Lead

By E. E. Schumaker,
Member of the Technical Staff, Bell Telephone Laboratories

The Western Electric Co. began using lead-sheathed cable in 1880, and at first employed a commercially pure grade of lead. But this material is so soft as to be deformed under comparatively small loads. The increasing size of cables imposed severe strains on the sheath in the operations of drawing into underground ducts and of placing them overhead. To secure greater strength, an alloy containing three per cent of tin was adopted in 1894. This was found to be much stronger than the pure lead, and incidentally it was more resistant to corrosion.

Tin is expensive, and it was found desirable to replace it by a cheaper metal. Research led to the adoption, in 1912, of an alloy of lead with 1 per cent antimony. This alloy, which is still the Bell system standard, has all the good qualities of its more costly predecessor; notably, it is several times as strong as commercially pure lead.

That such an improvement may be obtained by such a small change in the composition of the metal is at first sight surprising; it is only in recent years that

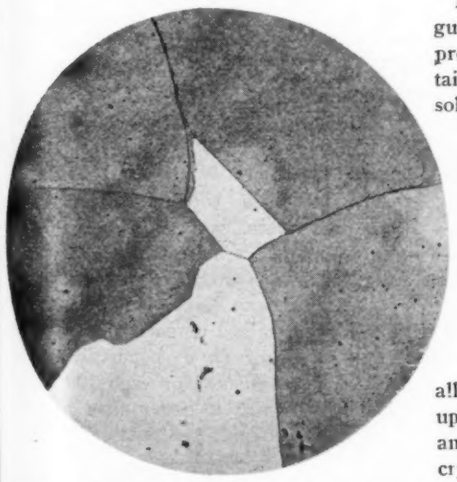


Fig. 1. Lead Antimony Alloy (99 Per Cent Lead—1 Per Cent Antimony) Which Had Been Annealed at 230° C. for One Hour, Quenched and Photographed Immediately. Magnification 200 Times.

enough knowledge of the structure of metals has been gained to permit even a partial explanation of such behavior.

Lead-antimony alloys are known commercially as hard lead, and we say that the addition of antimony hardens lead. "Hardness" is an excellent descriptive noun, but in technical use it has an uncertain significance. As applied to lead alloys, it refers rather to the stiffness of the metal, its resistance to bending, or more generally to deformation of any sort.

To relate this property to the composition and condition of the material would require a complete knowledge of metal structure, which we do not possess. A qualitative understanding, however, is given by our present knowledge which of recent years has been greatly extended, particularly by means of X-ray studies.

Metals, we know now, are made up of crystals, and these crystals are made up of atoms. The atoms are arranged in the crystals in very definite ways, spaced always in some geometric pattern. The crystals, on the other hand, are generally arranged within the metal in a perfectly haphazard fashion, and may be of very different sizes. Mechanical and thermal treatment, such as the extrusion process, tends to give the crystals a more uniform orientation, but there is always some slight change in orientation at the boundaries of the crystals.

In an alloy of two metals we distinguish three typical cases. There may be present but one kind of crystal, containing atoms of one metal held in solid solution with atoms of the other. Or, if neither metal is soluble in the other, there may be two kinds of crystals each made up of atoms of only one metal. But in the most common structure, there are two kinds of crystals, each containing atoms of both metals, but in different proportions.

In one kind of crystal, atoms of one metal will predominate, and vice versa. This is the case in lead-antimony alloys of high lead content; these are made up of crystals consisting mostly of lead, among which are interspersed a few crystals consisting mostly of antimony. These facts we know from microscopic and other observations.

Now in general, the amount of one metal that another will hold in solid solution varies with the temperature. Thus at 247° C. an alloy of lead containing up to 2.45 per cent antimony will consist only of crystals of lead containing antimony in solid solution. Any greater proportion of antimony will be present as separate antimony-rich crystals. But at room temperature only about 0.25 per cent of antimony can be in solid solution at equilibrium. Hence as an alloy of 1 per cent antimony is cooled from 250° C. to room temperature, most of the antimony will separate out of the lead-rich crystals and will form small new crystals consisting of nearly pure antimony.

The crystals in a metal, as was mentioned, may be of different sizes—the average is dependent on the conditions under which the metal crystalized. If the metal is rapidly frozen, they are apt to be small; if it is cooled slowly from the liquid state, they will be large.

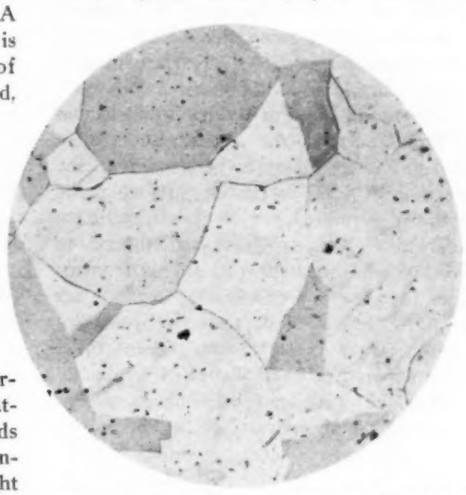


Fig. 2. Lead Antimony Alloy (99 Per Cent Lead—1 Per Cent Antimony) Which Had Been Annealed at 230° C. for One Hour and Then Aged at 20° C. for Five Days. Magnification 200 Times.

Now it is generally true that the smaller the average size of the crystals the greater is the resistance of the metal to deformation. This we can understand in a way, because the regular arrangement of the atoms in a crystal results in the existence of planes having a minimum resistance to shear; adjacent crystals will have these planes inclined to each other, and therefore two crystals have a greater resistance than one of the same size. The effect is similar to that of a pile of bricks; if the bricks are neatly piled, we can slide the upper half of the pile off the lower half fairly easy, which we could not do if the bricks were simply heaped up at all angles to one another.

The same explanation may be used to account for the hardening of lead by the addition of antimony. In sheathing a cable the metal is extruded through a die at a temperature of about 250° C. and is then cooled in the air. The alloy contains about 1 per cent antimony, and therefore

at this temperature is composed only of crystals of lead with antimony in solid solution.

As the sheath cools, some of the antimony atoms separate to form new crystals which occur within and at the boundaries of the lead-rich crystals. Although constituting only a small portion of the total volume, they are very small and hence numerous. In consequence, they very materially increase the resistance of the metal to deformation.

Hardening produced in this way is known as dispersion hardness, and is obtained in other alloys of commercial importance. Duralumin, the aluminum alloy of great strength which is used in airplanes and motor parts, gains its strength from a similar precipitation of silicides of copper and magnesium, which are present in the alloy in small amounts.

This explanation of the hardening action is only partial; the actual increase in strength is too great in proportion to the increase of inter-crystalline surface to be entirely accounted for in this way. One interesting and easily-grasped theory to account for the additional strength postulates that the tiny precipitated crystals act as keys, which break up the regularities of the larger crystals, and prevent these from slipping on their planes of weakness.

Other theories have been advanced, but these are too complicated to be touched on here, and are of greater value as suggesting lines of research than as means of forming a picture of the actual behavior of alloys.

Whatever the way in which the dispersed crystals serve to strengthen the metal, there can be no doubt that there is a definite relation between the number and size of these small crystals and the hardness of the alloy. Without attempting to explain the process, we can determine this relation experimentally, and thus find the requirements for greatest hardness. If there is too much antimony present, the particles will be too large, and the best hardening will not be obtained. An excessive amount of antimony will also cause brittleness.

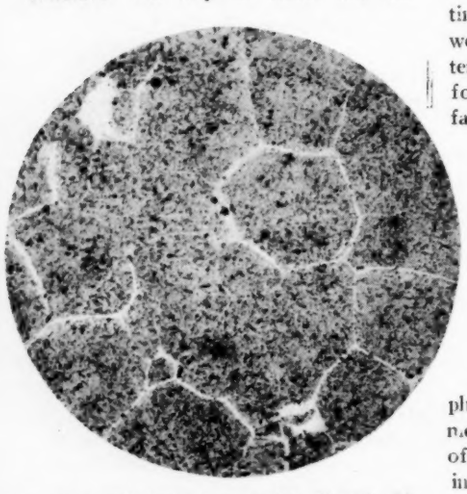


Fig. 3. Lead Antimony Cable Sheath Alloy (99 Per Cent Lead—1 Per Cent Antimony) Which Had Aged in Service for Eight Years. Magnification 200 Times.

In this connection it must be remembered that equilibrium at room temperature is only reached very slowly, so that the precipitation of antimony and the increase in hardness and brittleness go on for months, or even years, after the sheath has been manufactured.

If we could give an explanation of this hardening process more adequate than that roughly outlined we could perhaps devise new ways of treating metals which would give even greater hardness. For this reason, and to fulfill the more disinterested aims of pure science, such a more adequate explanation is greatly to be desired, and it is in many places being sought.

From the discussion given here it is perhaps hard to see why it is so difficult to find. One reason is that the atoms, which we have regarded as the ultimate components of the metals, are themselves highly complex structures, possessing many properties not yet clearly defined or understood.

Physicists today are concentrating their studies on the structure of the atom. Their researches have taught us that it is made up of electric charges acting on each other and throughout the immediate vicinity in highly complicated waves.

Throughout a crystal the atoms are regularly arranged, and their forces will combine to give regularity to the properties of a crystal along any given line, but at the crystal surface there is a discontinuity in the atomic arrangement that may well give rise to abnormalities in the internal forces resisting deformation. It was for some time thought that crystal interfaces must contain an amorphous phase; that is, a mass of metal in which the atoms were irregularly arranged, as in a liquid.

Without entering into further discussion of such speculation, it is evident that we cannot understand the behavior of metals until we know more of the properties of their structural elements, the atoms. For this the metallurgist must wait upon the physicist. If, on the other hand, the metallurgist can simplify his observations of the way in which atoms act in crystals into general laws, he may furnish the physicist with knowledge as to the properties of atoms from which may be derived further knowledge as to their necessary structure.

Telephoned About Fish from Floor of Sea.

William Beebe, explorer and naturalist, during a four-months' expedition to the coral reefs at Haiti the past spring, walked about the bottom of the ocean dictating to a secretary.

Stalking about the sea floor under 650 feet of water, Mr. Beebe studied strange fish through the glass window in his diving helmet. Sometimes he scribbled his impressions with a lead pencil on a zinc plate. At other times he dictated into a telephone in his diving helmet to an assistant on the deck of a four-masted schooner.

It is perfectly feasible, Mr. Beebe said, to pace the ocean bottom and dictate to a stenographer. It is absolutely essential for the sea floor-walker to get his impressions recorded rapidly, especially when a fish of a new species swims into the diver's range of vision. Some of these have scores of characteristics, which the naturalist desires to register before the fish can dart away and force the scientist to depend on memory rather than on absolutely contemporaneous notes.

For this work, an experimental telephone was installed in the diver's helmet by the Bell Telephone Laboratories. It did not work perfectly throughout the 100 days of ocean-bottom exploring, but it can easily be perfected, Mr. Beebe said, so that ordinary office routine can be introduced in ocean bottom work.

Mr. Beebe wore an ordinary bathing suit when he descended to the ocean bottom. The helmet, with its air and telephone connection with the surface, fitted over his head, leaving his feet and arms free and unprotected. He has worked this way among sharks and other species of bad reputation and never had been nipped, except occasionally by very tiny fish.

Omaha, Neb., Ranks High in Telephone Averages.

It was in 1877 that the city of Omaha, Neb., saw its first telephone. Two years later, in 1879, a telephone exchange was established, and, by the end of the year, the first directory was issued, showing 140 subscribers.

Since that time the telephone has grown steadily in Omaha, with the result that ten years ago there were 45,000 telephones, and now there are more than 62,000 in the city. In fact, Omaha ranks among the first ten American cities of 50,000 population or more in the number of telephones it has in proportion to population, there being 27.1 telephones for each 100 of its inhabitants, which is better than one for every four persons.

Illinois Annual Convention Set for November 17 and 18.

The dates for the "Service Convention" of the Illinois Telephone Association have now been definitely set. The convention will be held on Thursday and Friday, November 17 and 18, at the Hotel Abraham Lincoln, Springfield.

A special meeting of the executive committee of the board of directors and the entertainment committee was held September 6 at the Hotel Sherman, Chicago, for the purpose of formulating the program.

Fundamentals of Good Transmission

Brief Review of Major Influences in Development of Telephone Apparatus—Transmission Tests—How Northwestern Bell Company Has Increased Efficiency of Its Toll Plant—Address Given at Nebraska Association Convention

By L. F. Woods,

Transmission Engineer, Northwestern Bell Telephone Co., Omaha, Neb.

What are we striving for in good transmission?

By good transmission we mean to give the public a sufficient volume and clearness that an intelligent conversation may be carried on without repetition; to supply a grade of transmission which will bring two personalities together as efficiently for conversational purposes as though they were speaking to each other across the table.

Perhaps the only other consideration which has as much weight as the subject of transmission is that of cost in providing this standard grade of transmission. I cannot go into the cost studies as much as I should like to, but I would have you bear in mind that transmission is tempered by the costs involved in providing it.

I should like to review briefly some of the major influences in the development of telephone apparatus and toll lines which have been responsible for the great universal telephone system which we have in the United States today.

The first long distance open-wire line was constructed between New York and Philadelphia in 1886; and, when it was completed, it was impossible to determine the circuit on which the speaker was talking. We have here an example of the first case of inductive interference on record, and it was the beginning of the solution of crosstalk and inductive coordination by means of transposition schemes.

In 1900 we have the development of loading, which has been so extremely fundamental in its relationship to long distance transmission. In 1904 came the invention of the first successful telephone repeater. To be sure, it was not in its present form but it served the purposes at that time.

By means of loading and telephone repeaters, long distance transmission was extended from New York to Chicago in about 1906. During the subsequent ten years, further developments with vacuum-tube repeaters and more efficient loading produced the first great transcontinental toll line.

These are some of the outstanding developments which have not only enabled transcontinental transmission but also have increased transmission efficiency of the associated operating companies.

In the Northwestern Bell Telephone Co. we have been increasing the efficiency of our toll plant by the introduction of telephone repeaters which have materially shortened the longer toll lines. We have eliminated practically all of the iron-wire circuits in the wire plant, and have created a large number of additional circuits to reduce to a minimum the number of bridged stations and intermediate office equipment.

The introduction of the telephone repeater has done away with the costly system of loading and its resultant high maintenance cost; in addition, it has increased greatly the quality of transmission. In order that we may keep this high grade equipment and our toll lines in a condition which will provide the grade of transmission for which they were designed, it is necessary that we maintain a rather comprehensible system of maintenance. We have found it necessary to make a periodic survey of our central office equipment, of our toll office equipment, and of the toll lines themselves. We believe that we are justified in spending a considerable amount of money in keeping our equipment operating at standard efficiency.

It would take too long to discuss the details of all of our transmission tests, but the most important of these are, of course, the routine transmission tests supplemented by crosstalk and noise tests.

In measuring transmission, a standard unit has been chosen which is comparable with one mile of our standard No. 19 gage cable. Until two or three years ago this one mile of No. 19 gage cable was the standard for the associated Bell telephone companies. They are now using a standard known as the "transmission unit," which, as I have said, is comparable with the former standard.

A circuit, to give a commercial grade of transmission, should not be more than 25 or 30 of these standard transmission units in length. In terms of No. 12 copper wire, about 14 miles are equivalent to one transmission unit; and in terms of No. 10 iron wire, four miles are equivalent to one transmission unit. The desirability of using copper wire the size of No. 12 or larger in the toll plant may thus be readily seen.

Coming back to the subject of maintenance, we are giving a considerable amount of attention just now to the subject of "crosstalk." In our 1926 program we tested about 1,000 toll circuits and found that about 15 per cent of them exceeded our limiting value for maintenance purposes, which is 1,500 units.

Of this 15 per cent, we were able to clear up troubles which eliminated 312,000 units of crosstalk from 80 circuits. We were unable to apply remedial measures to the other circuits because they extended into connecting company territory, or into independently-owned offices.

Interference from power lines is causing considerable trouble to all of us. In all cases where Northwestern Bell lines are exposed, we are applying coordinated schemes of transpositions, and it is our aim to be of assistance to our Independent company friends whenever these conditions exist in their plants. In fact, I would have you understand that all of our testing facilities and engineering advice is available for your company.

We are very anxious that the public of Nebraska shall be served with a very high grade of telephone service, dependable at all times, and as universal as possible.

Two Ohio Companies Purchased by Knapp Organization.

The Northern Ohio Telephone Co., Bellevue, Ohio, of which Frank A. Knapp is the head, has purchased the Citizens Telephone Co., Delaware, Ohio, and the New Ashley Telephone Co., Ashley.

The Citizens company operates an automatic exchange at Delaware and also has exchanges at Cheshire, Kilbourne, Lewis Center and Radnor, operating a total of about 1,150 telephones, of which approximately one-half are common battery. The New Ashley company operates a magneto exchange of about 400 telephones at Ashley.

District Meetings of South Dakota Telephone Association.

The South Dakota Telephone Association held district meetings at Watertown, August 24, and at Madison on August 25. These meetings were well attended and many important problems of the telephone business were discussed.

The next series of meetings will start with one at Mitchell on September 20, at Huron and at Aberdeen on September 22.

Prices in the Metal Markets.

New York, September 6—Copper—Quiet; electrolytic, spot and futures, 13.25c. Tin—Firm; spot and nearby, $63.75; November, $63.37½. Iron—Steady and unchanged. Lead—Steady; spot, 6.50c. Zinc—Firm; East St. Louis, spot and futures, 6.27½@6.30c. Antimony—Spot, 11.62½c.

Points on Restricted Repetition

Factors Which Led to Adoption of New Method of Acknowledging Numbers—Advantages to Both Operators and Subscribers—Operator's Tone of Voice Important—Paper Read at Traffic Conference of the Tri-State Convention

By Miss M. McMurtry,

Instructor, Local Training Department, Western Division, New York Telephone Co., Buffalo, N. Y.

In the present-day business world, concentrated effort is made towards speed and the ability to do the job a little better. A step in this direction has recently been introduced in the telephone field with the introduction of "restricted repetition."

The practice of repeating the order given by the subscriber requires delay. "Restricted repetition" provides for acknowledging the subscriber's order with the phrase "Thank you," or "Right" instead of repeating the order given. This tends to shorten the interval between the order given and the action taken to advance the call.

A comparison of the former practice with the new one will, I think, serve to bring out the general advantages of the restricted repetition method. The former practice made it necessary for the operator to give her entire attention to the subscriber while he gave the number, while she repeated it and while she listened for his acknowledgment of the repetition. During this time she was unable to make any move toward completing the call. With restricted repetition, however, the operator, after concentrating her attention while the subscriber gives his order, can proceed at once with the operations involved in the completion of the call while she acknowledges the order.

The restricted repetition method was developed as the result of extended studies made in various parts of the country which showed conclusively that the order as given by the subscriber is clearly understood by the operator in a very high percentage of cases. To bring out this point, consider for yourself the number of times it has been necessary for you to correct the repetition of the operator and I am sure you will agree that it is seldom.

It was found, however, that many operators placed dependence upon the subscriber to correct any error in repetition, which led to a tendency on the part of the operator to pay insufficient attention to the order as given by the subscriber. Since the subscriber could not be depended to make this correction in all cases, it sometimes resulted in wrong numbers.

Since the repetition by the operator had for its purpose the establishment of a correct understanding of the order, and since this can be accomplished before the repetition takes place, it was concluded that the time spent in repeating was unnecessary. The time for the repetition could, therefore, be used in taking the necessary operating steps with a consequent faster service to the subscriber.

In addition, there is an actual decrease in the amount of fatigue experienced by operators. This is due to the fact that the acknowledgment phrase is considerably shorter than a full repetition would be and, further, is used uniformly on practically all calls.

Your Harvest Depends on You.

We must not hope to be mowers
And to gather the ripe, gold ears,
Unless we have first been sowers,
And watered the furrows with tears.

It is not just as we take it,
This mystical world of ours:
Life's field will yield as we make it,
A harvest of thorns or of flowers.

—Goethe.

The subscriber benefits through receiving faster service. Furthermore, the acknowledgment phrase being an expression of courtesy evidences the proper attitude on the part of the operator toward the subscriber. It conveys to him the assurance that she fully understands his order and that she is proceeding with it accordingly. This condition is further emphasized through the practice of having the operator request the subscriber to repeat his order when she is not certain that she has understood it correctly.

In placing this practice in effect, it is particularly essential that all members of the operating force be instructed to concentrate on the number as it is given by the subscriber. The moment the operator is certain that she understands the number correctly, it is important that she have her hand in a position to test the jack on a local-multiple connection or to depress the call circuit key or select an idle trunk, in all cases except those where it is necessary to write a ticket. The completion of calls can be expedited by picking up the front cord with the left hand when that is possible, immediately after plugging into the answering jack, later transferring it to the right hand if necessary.

In all cases where there is any doubt in the operator's mind as to the number which has been given to her by the subscriber, she should request him to give his order again. However, it will be found possible as the operating force becomes trained in the use of the method to keep the percentage of calls on which repetition is required to a small figure.

This operating method has been used in various places throughout the country over a considerable period, and it has been found entirely possible to effect the faster speed of completion suggested above without affecting the accuracy of service.

I think it would be well at this point to go a little into detail regarding a program which has been found effective at some offices where this practice was introduced. In the first place, much of the success of restricted repetition depends upon the manner in which the courtesy phrase is enunciated. The proper way of saying "Thank you" was covered in considerable detail in my paper on "Voice Technique." (TELEPHONY of September 3, 1927.) If the phrase is spoken correctly, it has a pleasing effect on the subscriber.

It is possible to use the phrase, however, in many different ways with varying inflections and intonations, and it is upon this that we must depend for the desired effect upon our customers. It should be said pleasingly with a rising inflection and a personal interest tone of voice in such a way as to indicate to the subscriber that the operator is bright, alert, and eager to serve. Particular care should be taken to avoid a mechanical or indifferent tone of voice.

It is also most important that operators do not cut out of the connection before the courtesy phrase is completely said, in order that the subscriber may always be able to hear the full acknowledgment. Where we formerly depended upon the manner in which the operator repeated the subscriber's order to let him know all these things, we now have to depend on the single phrase. Therefore, the manner in which it is said becomes of primary importance.

The chief operators, supervisors and employes and all other district or central office people who may come in contact with subscribers desiring information about the practice, should explain that the operators have been instructed to use the phrase when they are certain that they have understood the subscriber's order correctly so that they may establish connection more quickly and at the same time give him a courteous acknowledgment of his order.

If dissatisfaction with the practice is expressed by a subscriber, it may be explained that generally it has been found

to be satisfactory and that the majority of subscribers appear to like it. It may be pointed out that if the operator is uncertain of the number given, she will request the calling party to repeat it, thus avoiding the likelihood of connection to a wrong number. It may be said that comprehensive trials of this practice were conducted before it was extended to general use and that the accuracy of the service was not affected, but that a considerably faster service to the subscribers resulted.

The practice may be carried further than just the acknowledgment of subscribers' orders. It may be used in response to orders received from other operators or supervisors on which connection is to be established to a number. This practice is applicable to only those cases where the operator was formerly in a position to acknowledge the order, and if attempts are made to carry it further, it is liable to result in confusion to subscribers and operators alike.

It has been found that when the subscriber passes his call in an irregular manner it is advantageous to have the operator repeat the order in the way it should have been given. This serves as an example to our customers of the proper manner of giving telephone numbers and is of distinct value.

In closing, I might point out that restricted repetition, producing as it does faster service for the subscriber, is one more step in the progress of the work.

Public Relations in Traffic Work

Courtesy, Accuracy and Speed if Kept in Mind and Practiced Daily Would Eliminate Many Worries—Sincere and Insincere Criticism—Paper Presented at Traffic Conference of the Recent Tri-State Convention at Jamestown, N. Y.

By R. F. Pagels,

Exchange and Traffic Manager, Warren & Niles Telephone Co., Warren, Ohio

My subject, that of public relations, is perhaps the broadest and most important of any phase of telephony. An explanation for keeping this in mind at all times is not necessary. To confine my small number of suggestions to any traffic department would be just going a small part of the way, when we consider the area covered by our respective company organizations.

The relations with our public should not be our first thought. Let us think of the relations within our own traffic department or any one of the different departments. What are the facts pertaining to the employes? Are we a happy lot of folks? Or are we going along day by day hoping no questions will be asked?

We first must sell the business which we represent to ourselves. When this has been accomplished, we will find ourselves associated with a group of loyal and happy people.

I know there are many in this conference who have arrived at work with many happy thoughts, kind words, and a willingness to assist others in producing good will, which were shattered during the first 15 minutes of the day. Why? Was it because we did not agree with an unreasonable subscriber? Was it because we were not strong enough to acknowledge an error which we made the previous day?

How could anyone shatter or disrupt a strong mind, a mind which had been trained to meet any emergency? Did we lose all confidence in our associates? Did we allow our minds to wander? Where, after all, was our organization relationship?

All traffic employes are instructed, first to be courteous, second to be accurate, and third to be speedy. If these three thoughts were kept in practice daily, many of our worries would be eliminated. In addition to these, I should not omit the tone of voice, and repetition.

Speaking of courtesy, I have oftentimes wished that I could see the distance, and imagine the value of this word when properly executed. This recalls to my mind an instance which occurred only recently while using a reasonably long circuit, on which the conditions were none too good.

"The Foundation of Good Public Relations," Declares Mr. Pagels, "Is Satisfactory Service by All Departments of a Company."

Being interrupted several times, I noticed the difference in voices. First I was met by an abrupt challenge; second by a very pleasant tone, which to me meant relief and assistance, but for some unknown reason the second voice disappeared. The third voice was positive that I could continue my conversation if I would only try, but I just could not agree with the third operator's instructions.

After flashing my operator and calling to her attention the difficulties which I was having, I waited, when a thought struck me something like this: "I wonder if those operators' interests are anything more than to complete this ticket, and hurry to another; also, I wonder if those in our office care how much courtesy they extend to other offices, who are anxious to complete their ticket as quickly as possible."

Again, in thinking of the subscriber on the faraway exchange, who is calling a subscriber on our exchange, I wonder what impression we leave with the individual. Who is the loser if this subscriber is dissatisfied? Is the originating office going to be censored, or is the telephone service as a whole? Sometimes we speak of our service area. What does this mean, when our people are frequently using the service to different parts of the country including Canada and also Europe? I am thinking of the area our relation with the public must cover. I feel sure the efforts on behalf of all traffic departments must be alike.

Taking accuracy into consideration for a moment, I am thinking of the individual or organization that never makes a mistake. As has been said, we in the traffic department only try to fulfill with all possible accuracy the request made by individuals.

At this point, I believe that our companies are having their greatest difficulty in retaining the good-will of the public as the "guessers of numbers," as I am inclined to call people who are sure they remember the number they wish to be connected with. In all cases where the subscriber or individual is in error, the operator or company's equipment is being unjustly criticised by the called subscriber. Carelessness breaks down the valuable resources which time and unlimited effort have accumulated.

Speed is what a large percentage of the public think of in the present age. Everyone appreciates a connection which is established without delay. I am of the opinion that our toll business is being increased daily by reason of the present

short and simple methods, and likewise an improved public opinion. I also believe these favorable comments will strengthen our position, and continue to increase the volume of business.

I am sure every traffic department has the pleasure of taking a service complaint or criticism, at some time or other. When so doing, are we taking the proper precaution in expressing our appreciation to the subscriber, who is so kindly cooperating with us by calling our attention to the irregu'arities which are displeasing him? Are we careless, or do we place the criticism within the proper departments, in cases where our department has little or no control and is unable to lend proper assistance? Which would retain the good will of the individual?

In the telephone business, as in other public utilities, the foundation of good public relations is satisfactory service, which is not only accomplished by the setting up of connections, but also by the removal of troubles and prevention of their repetition by reason of poor plant or equipment; also the moving and installing of service. A delay in any one of these requests may bring about a suggestion of poor and unsatisfactory service.

Again, our commercial department must be informed in order that they may be able to supply in a prompt and courteous manner, information which may be requested by a customer. It must be our aim to serve our public to their satisfaction if it is within our ability to do so. If, however, we are unable to meet the particular demand, it is only reasonable to believe that a satisfactory explanation will be appreciated by the customer.

It is a known fact that our relations with the public have been affected in a serious way by reason of insincere criticism. An occasion of this kind adds to the expense and difficulties of management, and unless cared for in some way or another the germ may wander on for an indefinite period. It has been the aim within many, and perhaps all, telephone organizations to encourage their patrons to call to the attention of the company all irregularities. This has made possible a much better understanding as well as better conditions.

Recently I heard of a case where a man came to the office of the telephone manager to file his complaint by telling of the very poor service he was receiving. As it happened the superintendent of traffic was present. Acting upon a thought, the subscriber was introduced to the traffic department's representative, and the conversation which took place immediately became one-sided by reason of the fact that the traffic superintendent told the subscriber how thoroughly the service on this particular exchange was being checked, and continued by telling the subscriber how wonderful the service actually was proved to be by reason of studies, etc.

Upon completing the story in detail, the subscriber said: "That is fine; I am glad everyone is receiving such wonderful service, but get me, my service is still rotten."

Was this man convinced, and can we convince the public that they are all wrong when they have a just cause to complain? Would it not have pleased this subscriber if the manager had agreed to investigate the complaint? The manager's call to the subscriber a day or two later, asking if he had experienced any further trouble, would lay the foundation upon which better relations would be built. An additional call from time to time would win the battle.

Another instance occurred in one of our outlying exchanges which we purchased a short time ago. Our stock salesman approached a subscriber, and, after a minute or two of conversation, the subscriber remarked: "When is this telephone company going to give us better service?"

The surprised salesman questioned: "How long has this been going on? Has not your service been better the past two or three months?"

The subscriber answered: "Well, I just can't say; I haven't used the service for several months. It may be much better now."

Recently, one of our subscribers purchased a fair-sized block of our company stock. The reason for this was that one of our troublemen had told her some time ago that our toll business always increased when business in general slowed up. This added another good reason why our employes should know more about the company which they represent, for every man or woman employed has friends in their particular community.

Speaking just one moment about employes' and subscribers' interest in the local company: When they are part owners, if their holdings are represented by only one share of stock, of one kind or another, they immediately do their bit towards bettering our public relations, as well as bringing about a contagious interest in the company.

Therefore, may we keep in mind this fact, satisfactory service depends in no small measure upon satisfactory relations between the company and its customers.

Plans for Big Indiana Annual Convention at Indianapolis.

The Indiana Telephone Association, which will hold its eighth annual convention Tuesday, Wednesday and Thursday, September 20, 21 and 22, at the Claypool Hotel, Indianapolis, announces its program, subject to some changes, as follows:

TUESDAY, A. M., SEPTEMBER 20.

Registration.

Visiting exhibits.

Greeting old friends and meeting new ones.

Meeting of board of directors.

TUESDAY AFTERNOON, 2 O'CLOCK.

The president's annual address by Henry A. Barnhart, Rochester.

Secretary-treasurer's report by Charles S. Norton, Indianapolis.

"A Review of National Telephone Affairs," by F. B. MacKinnon, president, United States Independent Telephone Association, Chicago.

"Selling Telephone Service," by A. D. Lewis, division commercial superintendent, Indiana Bell Telephone Co., Indianapolis.

Appointment of committees.

Introduction of resolutions.

An evening with the exhibitors.

WEDNESDAY, SEPTEMBER 21, 10 A. M.

"Necessity of State-wide Regulation," by Carl Wilde, formerly director of service for the Indiana Public Service Commission, Indianapolis.

"The Safety and Security of Our Business," by Frank E. Bohn, vice-president and general manager of the Home Telephone & Telegraph Co., Ft. Wayne.

"Engineering as Applied to the Telephone Business," by A. L. Stadermann, secretary and engineer of the Citizens Independent Telephone Co., Terre Haute.

"How Things Are Done in Ohio," by C. L. Jones, president of the Ohio Independent Telephone Association, and manager of the Athens Home Telephone Co., Athens, Ohio.

Questions and answers.

WEDNESDAY, 2 P. M.

The operators' session, conducted by Miss Belle Bernetha, chief operator of the Rochester Telephone Co., Rochester, and C. R. Woods, general traffic superintendent of the Indiana Bell Telephone Co., Indianapolis.

WEDNESDAY, 6:30 P. M.

Banquet.

Address—"Things in General," by Frederick Landis, Logansport.

Music and dancing.

THURSDAY, SEPTEMBER 22, 10 A. M.

"How to Handle Service Stations," by R. V. Achatz, president, the Southern Indiana Telephone Co., Aurora.

"I. C. C. Depreciation Order No. 14700," by Harry Boggs, member, firm of Herdrich & Boggs, accountants, Indianapolis.

"Centralized Accounting," by O. L. Doud, comptroller, Southern Indiana Telephone & Telegraph Co., Seymour.

"Organization and Reorganization," by Charles S. Norton, secretary-treasurer, Indiana Telephone Association, Indianapolis.

Report of committees.

Election of directors.

This year's convention is expected to be one of the best, if not the very best, the association has held. More than 90 per cent of all the stations and toll lines in the state are owned by association members. The association now has 182 members owning 384 exchanges representing 518,723 units.

c Leadership Begins —

ests

THE Type 24 Dial perfected and placed on the market two years ago by Automatic Electric Inc. has attracted the attention of telephone engineers and operating men throughout the world, because of the remarkable and hitherto unequalled records for endurance which it has established. Its perfect operation without any attention whatsoever, both in laboratory tests and in the hands of the telephone user, is the result of years of painstaking and untiring effort on the part of the Research and Development Staff of Automatic Electric Inc. to perfect a dial whose performance and endurance would be unapproached by a contemporary product.

The Dial Testing Machine is but one of the many ingenious devices which have been originated and constructed by the Research and Development Department purely for its own use in carrying out development work on various pieces of automatic telephone apparatus which are being improved or perfected. That the effort is not in vain is daily proved by the economy and efficiency of hundreds of Strowger Automatic exchanges in operation in this and other countries throughout the world.

More Than 3,500,000 Strowger Automatic Telephones in Service or on Order Throughout the World

Automatic Electric Inc.

Factory and General Offices: 1033 West Van Buren Street
Chicago, U. S. A.

AUTOMATIC

When writing to Automatic Electric Inc., please mention TELEPHONY

Here and There in Telephone Work

Build P.B.X. Business by Knowing Who Can Use Them.

By Frank H. Williams.

In building more long distance business or in installing more private branch exchanges, it is tremendously important for the telephone company to know just what concerns in the city are in a position to use the long distance more frequently or to make use of such exchanges with profit. But how can the telephone company obtain this information without a costly canvass?

It is the simplest sort of a proposition. Such information can be easily and quickly obtained by making use of the classified business directory which is probably located at the back of the telephone company's regular directory.

Turn to these classified pages and go over each classification carefully, making a note opposite each name in each classification showing whether or not the concern is already using long distance freely and whether or not it already has a private branch exchange, or whether the concern has little use for these two classes of telephone service, or whether the concern is a good prospect along these lines.

Much of this sort of listing of possibilities can be done by a telephone company salesman or executive simply from his memory of local conditions.

Consider classification in the directory, of automobile dealers, for instance. Automobile dealers should be particularly strong users of long distance service because of the necessity for getting in touch with the factories from which they obtain cars, tracing shipments, and all that sort of thing.

Surely the telephone company representative who is familiar with what his company is doing can quickly run through the local list of automobile dealers and make a note opposite each name, indicating just what use the dealer is making of long distance and private branch exchange service. Then it will be a simple matter to call on the good prospects on the list and show them specifically just how it will be to their advantage to use long distance more freely and, perhaps, to install private branch exchanges.

In presenting this sort of sales talks to good automobile dealer prospects, it will be found advisable to cite instances of what other local automobile dealers are doing along the same lines. Such evidence will be in the nature of high class testimonials and will do more than anything else to make the dealers feel like getting busy in the use of long distance and, perhaps, in the installation of private branch exchanges.

Then take up the local automobile repair shops. Comparatively few repair shops in average size cities are big enough to find a use for private branch exchanges, it is true, but long distance service can be used by all shops with very excellent results, indeed, in place of telegrams or letters when it is desirous to secure parts quickly. If specific instances where other local repairmen have used long distance with wonderful results in the way of speeding up needed shipments, then many such repair shops could probably be induced to place a much greater reliance on long distance than has ever been the case before.

Do this same sort of thing with the other automotive businesses listed in the classified pages of the directory.

Surely such an examination, followed by constructive selling among the best of the prospects thus disclosed, will be productive of much good along the lines of increasing the telephone company's long distance business and along the line of getting more local concerns to install private branch exchanges.

Take up all the other businesses listed in the classified pages in the same way. Consider lawyers, for instance. Here are professional men who already use long distance quite extensively, in all probability, but who may not be cashing in as strongly on private branch exchanges as might be the case. Go to some of the leading lawyers in the city and put up this sort of a private branch exchange talk to them:

"You have a big business that is constantly growing. But you want more business all the time, of course. One of your best assets in getting more business is prestige and the reputation for doing a big volume of legal work. Consequently, anything you can do to enhance your prestige and reputation along these lines is bound to be a distinct help to you in getting more business. So it will be to your advantage to consider the installation of a private branch telephone exchange in your office.

Think of what a busy appearance it would give to your office to have such an exchange, so placed that visitors to your office could see it and could also see the attractive girl in charge of the exchange. Of course, such a girl would handle not only the exchange but also do office work, as well."

Such a sales argument as this would probably make a very deep impression on many of the lawyers to whom it was presented, with the result that some of them could probably be induced to install private branch exchanges.

Consider, too, the long list of physicians in the classified pages of the directory. No doubt some of the more enterprising of these physicians could be induced to install private branch exchanges by giving them the same kind of talk as that given to the lawyers.

Again, consider the list of grocers in the classified pages. Pick out the largest and most enterprising of the grocery stores which do not already have private branch exchanges and then go to these stores and give them this kind of talk:

"You are already doing a lot of telephone business, and you find this a very profitable business because it takes less time to wait on telephone customers, as a general rule, than it does to wait on customers who come into your store. Consequently, it will be distinctly to your advantage to do everything you possibly can to increase your volume of telephone business.

Now one of the best possible ways of increasing this business is by being equipped to handle all of such business you could possibly get. And one of the best ways of getting equipped to handle more telephone business is by installing a private branch exchange and having a girl always in charge of the exchange to immediately take all orders that come over the telephone. Of course, this girl can do a considerable amount of office work in addition to handling the exchange.

If you will install a private branch exchange, and then make a big thing of advertising it and telling the public that you want more telephone business and are fully equipped to handle all such business that comes to you, there's no doubt that you will get a lot more of such business."

Surely this line of talk would be calculated to make the majority of live-wire grocers sit up and take notice, with the result that many of them could be induced, almost immediately, to install private branch exchanges in their stores.

And so on through all the other kinds of business listed in the telephone directory's classified pages.

This is a splendid way of knowing where you are when it comes to the proposition of trying to get more long distance business and more private branch exchange business.

Try this plan, Mr. Telephone Company Executive, and see how it helps you get more business.

Locating Leaks in Lead Cable Sheath by Air Pressure.

Until the early part of 1924 there were no means of successfully detecting cracks or obscure openings in the sheath of cables, and therefore failures were not uncommon during the rainy season. Having been

brought into contact with this annoying condition on many occasions, Bay Division Supervisor of Cable Maintenance C. A. Trath, of the Pacific Telephone & Telegraph Co., set about to devise a method whereby these hidden sheath breaks might be detected before they actually caused trouble.

The idea, says the Pacific Telephone Magazine, was conceived of pumping air into the cable through a hole which could be purposely made in the sheath and afterwards sealed when the test was completed. However, before this was practical it was necessary to overcome the additional problem of taking all moisture out of the air which would be pumped into the cable, as even a trace of moisture would seriously affect its serviceability.

This problem was overcome by first passing the air under pressure through a small cylinder containing calcium chloride. The calcium chloride absorbs the moisture in the air before it is passed on into the cable, and therefore must be replaced periodically as it becomes saturated. In order to prevent any of the calcium chloride granules entering the cable, the granules are enclosed in a wire screen of fine mesh.

When it is desired to test a cable, a small hole is made in the sheath by means of an auger. A hand pump is then connected to one end of the calcium chloride tank and the cable to be tested is connected to the other end of the tank by means of a hose and connections.

Air is then pumped through the calcium chloride tank and into the cable, the gauge indicating the pressure within the sheath. If a sheath break exists, either in the visible portion of the cable or some place in the underground duct, the air which escapes through this break can be distinctly heard.

A container and brush are used to coat the cable with a film of wet soap, which greatly aids the detection of a break by causing a bubble at the point of the break when air is forced into the cable.

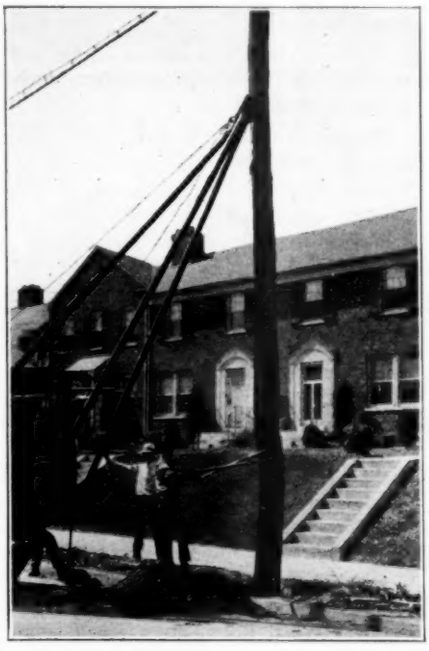
Numerous sheath breaks which could not be located by other means, and which probably would have caused trouble, have been detected by use of the air gun devised by Mr. Erath.

"Black Bottom" Poles of Chesapeake & Potomac Telephone Co.

The "black bottom" has now become a very definite part of the telephone industry, not through the art of the dance, but by scientific efforts on the part of telephone engineers to preserve the life of the poles used in the construction of their lines.

Telephone poles now used in the territory of the Chesapeake & Potomac Telephone Co. and associated companies, which operate in the District of Columbia, Maryland, Virginia and West Virginia, have "black bottoms"; that is, the end of the pole which is set in the ground and including that part which extends about one foot above the ground line, has been treated with creosoted oil to preserve its life. The pole, when it becomes impregnated from this oil treatment, remains a glossy black, hence the name "black bottom."

The engineers have estimated that about



"Black Bottom" Is New Term Applied to Poles Used by Chesapeake & Potomac Telephone Co.

28,000 poles would be used during 1927. Of this number about 25,000 are specified to be butt-treated.

Chestnut poles are used extensively by telephone, telegraph and power companies of the states mentioned, in the construction of their lines and, since this very valuable timber is fast disappearing, due to a serious chestnut blight which is affecting the growth of the timber, and to the large number of poles used annually, something had to be done to preserve the life of the remaining poles and pole timber.

Poles have a long life above the ground, but due to the action of the elements, brought about by wet and dry, and cold and hot seasons, deteriorate and rot at the ground line after a few years' service. This not only means added expense to the operation of the telephone system but generally the poles break off at the most inopportune time, causing interruptions to the service of the communication or electrical systems when they are most needed.

Recognizing the seriousness of the problem, the telephone engineers began experiments that would develop some means of lengthening the life of the poles. After exhaustive research work, it was discovered that the chestnut poles treated with hot and cold processes of creosoted oil lasted very much longer than the untreated pole. Following these experiment, pole-treating plants have been located by the American Forest Products Co. at several points throughout the chestnut timber belt which now lies largely in Virginia and West Virginia.

Chestnut timber is found only in the Appalachian range of mountains and in certain sections of New England. The chestnut blight has practically destroyed all of the chestnut timber north of the Potomac river, and while the U. S. Department of Forestry and the state forestry departments are making heroic efforts to overcome the blight, it is now making serious inroads on the timber in the sections heretofore unaffected.

The treatment and the results obtained in butt-treating poles has been explained in a thorough manner by T. C. Smith, an engineer of the American Telephone & Telegraph Co., in the Bell Telephone Quarterly. Excerpts from Mr. Smith' article follow:

Where practical, the poles are seasoned six months or more before being treated. The method of treatment consists of immersing the butts to a level of about one foot above what will be the ground line of the poles, for not less than seven hours in creosote at a temperature between 212 degrees and 230 degrees Fahr.

At the end of the hot treatment, the hot oil is quickly removed from the tank and cold oil at a temperature of from 100 degrees to 110 degrees Fahr. is permitted to flow quickly into the treating tank to the level previously reached by the hot oil. The cold oil treatment lasts for at least four hours.

During the treatment, the creosote is absorbed by the pole to such an extent that as an average, about 95 per cent of the sapwood in the treated section of the pole is saturated. This requires from two to four gallons of oil per pole, depending upon the size and condition of the pole being treated.

The oil change ordinarily is made in from 7 to 12 minutes from the time the pump starts to remove the hot oil until the cold oil is up to the proper level. Experience indicates that no material loss in penetration of the creosote into the poles is experienced by having the treated section uncovered for this short length of time. Practically the same penetration is obtained as would be secured by keeping the poles in hot oil for the same length of time and then permitting the hot oil to remain around them until its temperature had gradually fallen by radiation to that specified for the cold oil bath.

Changing the oil instead of permitting it to cool in the treating tanks greatly expedites the treatments and consequently increases the plant capacity, which of course, results in a corresponding economy in the cost of treating the poles.

Doings of the Noon Hour Club.

By JOHN A. BRACKEN.

The final "here" and "present" were given to Dad, the secretary, as he completed the roll call. The chairman then arose and said: "Boys, we have as speaker

for today our installation supervisor, who need not be introduced because he is well-known to all present."

"Mr. Chairman and members, in speaking before this club I am reminded of the salesman who was asked: 'What is the most interesting proposition you've ever worked on?'

He replied: 'The one I have in hand today.'

So, when your chairman asked me this morning to talk to you at noon, he sure gave me a most interesting proposition to work on.

I know most of you have often heard the two expressions—teamwork and co-operation—but I wonder if it has occured to you that it is teamwork which is responsible for the success of all great enterprises. If our company is to have a plant, both inside and outside, that we can be proud of, more than ever we must all, student and old employe alike, put our shoulder to the wheel and help push, conscientiously and continuously. System is the main thing.

And speaking of students—no matter from what school or college we were graduated, or how long we have been in the business, we are always a student in the telephone game. It is in truth changing all the time, and you, yourselves, are in the midst of it. These changes have an added meaning to every man engaged in plant work, and advantage should be taken of them.

Practically nothing is done as it used to be done. Plant work ten years from now will not be performed exactly as it is now. It will be considerably improved through use of new kinds of materials, equipment, tools and methods.

So, whether we want it or not, it is up to us to learn to become receptive of new ideas and methods and not condemn a thing because it is new.

It seems to be a well-established principle that the larger a telephone system grows, the greater will be its cost of operation per station. As the system expands, the cost is increased in ratio by greater capital needed for new and larger central office buildings, switching equipment, outside construction and station installations.

In the installation department we endeavor to reduce some of our portion of plant expense in this way:

First, by training each employe in accurate installation methods in accordance with the standard specifications, thereby eliminating many sources of error.

Second, by stimulating to effort in the employe certain traits of character requisite in the telephone business, especially that of being on the alert to help others.

Third, by convincing him that modern installation practice is both a science and an art, the application of which makes for better service to the customer.

Fourth, by establishing a rating plan upon a unit basis covering the performance and quality of work for each particular job. If a man fails to obtain a high rating, it is generally due to effort mechanically expended in unthinking activity.

Fifth, by equipping line crews and installers with necessary and latest type standard tools.

Sixth, by having installers obtain sufficient material each morning before leaving the store room.

Seventh, by having the line trucks loaded at night, with wire, brackets, knobs, etc., to meet the next day's requirements. Telephones, protectors and directories are arranged in packages and also loaded at the same time to be delivered at subscribers' premises when the line crew arrives to run the drop. This night loading of trucks enables the crews to leave in the morning without waiting to draw the equipment from stock, thus saving time.

Eighth, by having the linemen and installers test each circuit to ascertain if it is working before proceeding to run the drop or start the inside work, and to notify the testman immediately if the line is dead or open.

Ninth, by instructing linemen and installers to carefully plan wire runs outside and inside of buildings in such a manner as to avoid unnecessary use of material and waste of time.

Tenth, by testing each station installation upon completion relative to calling, talking and ringing. Any necessary adjustments to the apparatus are made, tools are packed, a final o. k. is obtained, and the installer proceeds to the next job.

We might say that today subscriber station practices, as a whole, are far better than they have been in the past, yet no one will assert that they are as good as they might be. Improvement in them can be brought about most rapidly through united effort on the part of all who understand both the function of the equipment in the telephone plant and the obstacles to the successful performance of that function.

Fortunately for the possibility of improvement, few details of the modern station and other plant practices are so definitely established that they can not be changed.

In concluding my talk today, I want to say just this: Let us all try to get a clear understanding as to the relation we bear to one another; that we are working together for a common purpose; and that, from the highest supervisor down, there is no other desire than that of helping one another to do the work which is committed to each.

Above all, let us bear in mind the fact that each one contributes something of value, which we all dedicate to a good cause—the raising of one type of human service to a higher plane—the telephone."

Trouble on Grounded Party Line; Our Suggestions.

I have a case of trouble upon which I would like to have your opinion. I have been in this business for 20 years and this is the first case of trouble that I have been unable to locate.

It is on a grounded country line about five miles long, consisting partly of No. 12 and partly of No. 14 iron wire. The telephones are all five-bar 1,600-ohm ringers and have condensers. Like most country lines, the line is not insulated very well, but I have them 20 miles long that are in worse shape than this line, loaded lots heavier and yet work fine.

I have no trouble on this line until I get out to Station No. 5. No. 5 can ring Central and talk very well; No. 6 cannot ring Central. Sometimes it comes in just so you can see drop fall, and you can hardly hear them, also the same thing with No. 7. I have installed No. 12 wire from No. 5 to No. 6. It helped a little, but not much. No. 6 can ring No. 5 strong, and talk very plain, so can No. 7. No. 5 can ring Nos. 6 and 7, but we cannot ring either No. 6 or No. 7 from the office. Sometimes we can ring them just a little, very weak.

I have examined these telephones and tested every one of them, and there is no trouble in any of them; also have examined the house wires and grounds, and there is no trouble in them. The line from No. 5 to No. 6 is of new wire and no grounds on it anywhere. All boxes out to and including No. 5 work fine and Nos. 6 and 7 work perfect with No. 5, but I cannot get to office from them. This is the most peculiar case of trouble that I have ever run across. I have tested the line every few poles but cannot locate it, and I have examined every box on line. It looks as if the trouble ought to be on line but it is not.—E. L. H., Oklahoma.

We recommend that you measure definitely the conductor resistance of the line from the central office clear to the end, and also the insulation resistance. This should be done with all the telephones disconnected if possible. It would be sufficient to test both insulation and resistance by means of a battery and voltmeter, which you undoubtedly have.

Look for instrument trouble, particularly a hand generator which fails to clear, but remains across the line even when the crank is at rest. The station at which this happens will always be able to ring everybody else the same as usual, but the generator armature winding is a rather severe load and interferes with other people ringing. Station No. 5 is suspected, but of course you should make a careful inspection of all of them.

This is a case which can only be solved by careful, intelligent testing on the job. Although you may think that all the instruments are perfect, yet it is possible that a more careful examination may reveal trouble.

If you are in a dry country, it will be well to look to the ground rods. If you have this trouble during the wet season, it may be due to the line leakage in the trees, or perhaps in the wiring through the side of the house, if both wires are led through the same hole without rubber insulation on them.

Economics of Telephone Business

Third of Series of Articles Presenting a Commercial Analysis of the Telephone Business—Development of Business Principles Understood as Fundamental to Successful Management of Plant—Rates, Revenues and Service Classification

By C. E. Campbell,
District Commercial Manager, Northwestern Bell Telephone Co., Waterloo, Iowa

Rates are the charges applied to each individual transaction. Revenue is the money received from applying the rate to the transaction. Rates are not revenues, and may never produce revenue unless accepted by the subscriber, and the transaction completed.

Revenue, and not rate, is the objective. The rate is merely a means to the end. High rates do not necessarily mean high revenue, nor vice versa. The number of transactions has as much to do with the revenue as do rates. Even revenue is not the final objective. Expenses of producing the service come in and eat up revenue.

What we are really concerned about is the amount of money left after we have paid the bills—the net. Gross revenue is the total monies collected from operation, and net revenue the amount left after the expense is paid. Low rates which stimulate a large number of transactions, provided they are high enough to leave a profit above the cost of the service, often produce more net revenue than a higher rate which would not be used so much.

There is a just provision in the federal constitution prohibiting the taking of private property without just compensation, and courts have uniformly held that rates which do not produce sufficient net revenue to allow a reasonable return on the value of the property, are confiscatory and cannot be legally enforced. To that extent, telephone companies, like all others, are protected. A rate, however, that barely avoids confiscation, is not necessarily a fair, reasonable or proper rate.

There are two economic principles which will finally always control the minimum and the maximum to which rates may move.

They cannot go below the cost of producing the service, or the producer would quit business—finally through necessity, if not earlier through choice. They cannot go above the value of the service to the purchaser—if it did he would not buy and there would be no transactions to which rates could be applied. Between these two extremes, rates may and will fluctuate; beyond them—never, for any extended time.

The difference between these two items—the cost of production and the value to the user—is the profit of the transaction. It is the measure of the world's increased wealth by reason of the transaction. It is economically of advantage to the public that the spread or difference between these two items be as great as possible, for it means that much more wealth has been created, or brought into existence, for our joint benefit. This principle holds true in any business.

Between these two extremes, just where should a division be made; what should the rate be? We will all agree that the rate should be fair, reasonable and just, using the words in their ordinary sense. What is a fair rate, as between the parties to the transaction? It would mean that neither had advantage over the other; that there was an equitable division of profits between them.

It would be reasonable that both should profit, and that the profit to each was honestly balanced. If the cost of the service was $1, and the value to the purchaser $2, there would be a spread or total profit of $1 to the transaction; and if the producer and the seller were working together as equal partners, we would say it fair to divide the $1, half to each—that would be a reasonable and a just division.

If, however, by quoting a selling price of $1.50 on this service, it would enable new markets to open for its use, whereby the number of transactions would be greatly increased, the volume of benefits would be greatly increased to both producer and user, and we would say that was a fair, reasonable and just thing to do.

If rates are fair, reasonable and just, our profits, regardless of their great magnitude, are likewise fair, reasonable and just. By reason of the great number of transactions the amount total may be large, but it is only the sum of them, and a thousand small fair transactions cannot make one large unfair transaction. If the company's profits were 20 per cent or 50 per cent, it is not unfair, for the subscriber has also received his like profit of 20 per cent or 50 per cent.

No attempt can properly be made to limit profits. Proper economics would strive to increase them, thereby increasing the world's wealth. The thing to be accomplished is a fair, reasonable and just distribution of the profits. That is why commissions are given the power to regulate rates. They have no direct power to regulate profits.

The service requirements of a particular community should govern the classification of service sold. We are like other merchants attempting to meet a public demand. If the people want "Pillsbury's Best" flour, that is what the merchant will handle. If women want silk hose, they will be available; not all women, however, can afford to wear silk hose all the time—some will want cotton.

So with telephone service, one may need more than another. A separate line for his exclusive use, or perhaps two or three lines, may be the requirements of one subscriber, while another may have only occasional use, and will be well able to share his line with another. For this reason, and in order that the cost may be reduced commensurate with the needs, a party line service is provided.

We must remember, however, that in the use of telephone service, there are always two parties to a conversation; one cannot use his service alone. Thus the service that one subscriber has affects vitally the service of every other subscriber whom he may call or who calls him.

It will be realized that when four parties are using one line it will, on the average, be busy more frequently than if there were one party on the line; and for the protection of the general service, we must see that no exchange has too large a development of four-party lines, and, consequently, too many busy reports. We must watch the development very closely to see that the subscriber who really needs two-party service or straight line service is not sold four-party service.

In order to bring about the development along these lines, special care must be exercised in fixing rates for the various classes of service. The differential in rate between the four-party and the two-party lines must not be so great as to tempt unduly the man with two-party needs to buy four-party service. The same is true as between two-party and individual line. Likewise, the rates should be so set that the profits returned to the company would not induce them to direct the development

Get, Save, Give.

Get all you can without hurting your soul, your body, or your neighbor.

Save all you can, cutting off every needless expense.

Give all you can. Be glad to give, and ready to distribute; laying up in store for yourselves a good foundation against the time to come that you may attain eternal life.—John Wesley.

to the lower grades of service for the increased profit.

The economy in party line service over individual line service comes mainly from decreased plant investment per station, required in central office equipment and outside line facilities. The same switchboard equipment needed for one individual line is sufficient for four four-party line subscribers. If the subscribers were together in one group one mile from the office, one mile of circuit would care for them all as against four miles of circuit required to furnish them each individual lines.

It is apparent that this lesser investment per station would require less revenue for return on the investment and, there being less property involved, maintenance and depreciation charges would also be lower. In the smaller exchanges where multiple switchboards are not used, and where the subscribers are close to the office requiring only short lines, the saving is proportionally small. In the larger exchanges, where the switchboards are complicated and expensive, and the average length of line is much greater, the saving becomes more marked.

For this reason, small suburban localities near cities usually have heavy party line development. Rural service is more or less forced to multi-party development, because the expense of individual lines to each would necessitate prohibitive rates.

It is also interesting to note that the city where party line service would make the greatest saving, is the place where it is least likely to prove sufficient.

In the city where there are thousands of other telephones to which calls may be made as against a few hundred in the small town, the use of the service is much greater; more calls are made; the calling rate is higher, and the subscriber's need more likely to be too heavy for limited party line capacity. For these reasons, party line service is more satisfactory in the small town, but on account of the lower rate requirement of the small town is less needed.

In the past, four-party line service has aided materially in telephone development. By its use, telephone companies have been able to offer a rate which was materially lower than would be possible in connection with a better grade of service—and this low rate has brought subscribers we otherwise would not have. As soon as they began to use telephone service, they discovered its value and extended their use, gradually grading up to higher classes of service. There is probably still a field for the four-party rate in this respect in those towns where our development is low.

Another classification of service that is usually made is a division between business and residence service. This is a more or less arbitrary division and really is more dependent on the location of the telephone than on the exact use of the service.

In a store, or place of business, we assume that the general use of the service will be for business purposes as distinguished from the ordinary social use of the residence telephone, and in the majority of cases the assumption is correct. Generally, the business telephone is used more, requiring more time of the operator in furnishing added service. With increased use of the equipment, the maintenance expense would be a little heavier. On the other hand, however, business telephones as a rule are located closer to the central office requiring, on the average, a much shorter line to reach, and a proportionately lower cost per station.

From the standpoint of cost, it is doubtful if the rate differential usually used between business and residence schedules could be justified. If we view the matter, however, from the other angle—the value of the service to the user—we realize at once that it is much higher in the case of the average business user than it is in the case of the average residence user. The spread of profit, or the difference between cost and value, is so much greater in the business service than in the residence service, that a fair division of the spread, or profit, results in a higher business rate.

A higher business rate, in turn, makes possible a lower residence rate and, consequently, a higher residence development, in turn, makes the service more valuable to the business user. It is of so much advantage to the doctor, to the groceryman, to the meat market, to the general store to have as nearly as possible all residences connected by telephone that he can afford to bear part of the burden of the cost of their service. They are all his customers, and from them he receives his business.

It might be argued that the merchant redistributes this telephone cost to the residents in the price of his groceries or meats. He does; but if it were not for the fact that this business moves by telephone, it would move by some other means of communication, such as personal solicitation, which would be more expensive and a proportionately higher cost would be passed back in the cost of the groceries or meat.

(To be continued.)

Mexican Tel. & Tel. Pushing Lines Toward United States.

Long distance telephone service between Mexico City and Monterrey was inaugurated on August 6 by the Mexican Telegraph & Telephone Co. This company is pushing its lines to the United States frontier, and it is expected that the lines in the Mexican capital will be connected with the American Telephone & Telegraph Co. net at Laredo, Texas, within a few months.

During the past year this company has connected Mexico City with the following Mexican cities: Monterrey, Saltillo, Tampisco, San Luis Potosi, Queretaro, Pachuca, Puebla and Toluca.

THE GOODLY HERITAGE

By Miss Anne Barnes,

Traveling Chief Operator, Iowa Independent Telephone Association, Des Moines, Iowa

A teacher in a Western State suddenly became wealthy when a distant relative died, leaving her a fortune acquired in the oil business.

She was one of the best teachers in Crystal City, and as soon as her good fortune became known, people said that, of course, she would give up her work for the life of luxury and ease to which she had fallen heir. But instead of retiring, she kept right on teaching.

I do not think people would ordinarily do this, but the reason she gave for her decision seemed well worth remembering.

This is what she told us: "After many years of preparation for what I felt was my life's work, I have just nicely launched into it. I do not intend to continue teaching all my life as I might have if this fortune had not been left me. But I do want to make my place in the world; to attain a measure of success."

After all, that is not an unusual way for anyone to feel about his vocation. Most people want to receive favorable recognition of their part in the world's progress and stay with it until they do. Of course, few of us are put to the test as was this teacher.

Why is it that the "Little Corporal," who held the power of France in his hand, desired to be spoken of as "Napoleon the Great"?

We fit into our proper niches in life quite naturally; adapt ourselves to the comforts that our incomes provide—but that alone does not satisfy.

We have a far greater craving, even than being rich and idle, when we stop to analyze our innermost desires. It is to carry a definite responsibility so effectively that we will some day win the admiration and respect of our fellowmen. We want to make a *name for ourselves.*

Having attained it, we can then say: "The lines are fallen unto me in pleasant places; yea, I have a goodly heritage."

The Employes and Public Relations

Many Public Utilities Have Sensed Solving Problem of Public Understanding Through Proper Training and Direction of Employes But Not Nearly Enough Making Organized Effort—Address at Convention of Kansas Association

By C. W. Motter,
Publicity Director, Lincoln Telephone & Telegraph Co., Lincoln, Neb.

The telephone business and the nature of its service 24 hours a day, 365 days a year, place a responsibility on telephone company employes of being prepared to represent and to serve the industry creditably on all occasions.

The greatest menace to the future progress and growth of the telephone industry, as I see it, is not a failure in the mechanical efficiency, nor a hostile and disgruntled public sentiment. It is the lack of appreciation by those engaged in the business of their responsibilities for improving their understanding, and therefore appreciation by their neighbors and friends of the business and the service it renders.

The telephone employes of the United States could, if properly trained and directed, forever "spike the guns" of the demagogue and solve the problem of public understanding of the telephone business or of any of the public utilities. In so doing they would not only be advancing the best interests of the industry and the public it serves, but would advance their own individual interests and worth to the business.

Generally speaking, many public utility organizations, and particularly the telephony industry, have sensed this possibility, but not nearly enough of them are making any organized effort.

May I say right here that this program of employe training for public relations service cannot be spasmodic, only touching certain departments of the organization; rather, it must cover the entire scope of the industry, and it has as much a place in the program of the small organization as it has in the larger one. In fact, I am led to believe from observation that oftentimes it is the one important factor in the operation of the smaller companies which is oftentimes sadly neglected.

May I say that in our own organization the program is so designed and set up that every employe, from the sturdy lineman to the president of the organization, is constantly in touch with a well-defined plan of company activities, plans and programs.

How It Looks in Figures.

There are approximately one-half million telephone employes in the United States. If each of these one-half million employes would cultivate the friendship and confidence of people outside of the industry, it would be but a short time until the people of America would be sold—every one of them—on the telephone industry.

Couple this contact of one-half million telephone employes with ten million people with a thorough understanding of the business; add to this contact and understanding an incentive in the way of prizes, etc., for results obtained such as many companies offer in merchandising campaigns, and the benefits would be far greater than any yet obtained in our so-called public relations work.

"Contacts of Telephone People with the Public," Declares Mr. Motter, "Are Perhaps More Numerous Than in Any Other Branch in the Utility Field—Which Places a Greater Responsibility Upon Us Who Are Engaged in a Great Public Service."

A great many telephone executives have not yet caught the vision and purpose of public relations as more than a hand-shaking, silver-tongued oratorical and free newspaper space-grabbing gesture. They have not realized that the greatest good which can come to the industry is to impress every employe with his or her individual public relations responsibility and prepare him or her to handle it with credit to himself, the company, and to the industry.

It isn't the public that needs education about our business as much as it is the telephone executive and employe. Then they need a well-defined plan of procedure.

A short time ago I spent a few hours in the office of a friend who had outlined a plan of employe training to overcome a condition that existed in his business, which not only had been the cause of the increase in labor turn-over but had been the cause for a noticeable decrease in the volume of his business. Before going over the plan with him, I asked what prompted him or what was the reason for this employes' educational plan he was proposing to put into effect. This is the story he told me:

About six months before, one of the boys who worked on one of the delivery trucks left a package at the home of one of the new customers of this large store. As he was leaving the house, the customer called to him and asked if the department store he was working for carried rugs and draperies. The delivery boy walked back to where the lady was standing and this is the reply that came from his lips:

"Lady, I'm sorry. I can't tell you whether they do or not; you know, I'm just the delivery boy."

Another instance which drives home the need for a definitely outlined program of employe education happened in a small community where the employes generally were aware of all company activities. The winter issue of the telephone directory had just been delivered. Several changes had been made in the directory in order to give the subscriber the information he desired for telephone communication in the most convenient way possible, as well as standardizing the book to conform to the company's directory practices.

The day following the delivery, one of the installers at that exchange was placing a new business telephone. After he had completed the job, he handed the manager of the store a copy of the new directory. The manager of the store at once recognized that several changes had been made, and he immediately asked the installer why.

Too often is a similar answer given, and much to the company's sorrow does this information become the source of subscriber suspicion and distrust. Listen to this, which was the answer given:

"I don't know why they made the change in the directory. No one ever told me. I guess it's all right. Maybe those fellows in the commercial department had to have something to do."

You say that is exceptional and a far-removed case. What would you say if you were in that installer's position, without the slightest knowledge of why the changes were made? You cannot afford to overlook the least possible opportunity to give employes a thorough understanding of the aims and practices of the industry.

May I cite another example which clearly sets forth the practicability of training employes, and in some instances local stockholders, for their individual responsibility as good-will builders for their business, as the constant guardians of its present interests and the builders of its future?

In a little community of about 5,000 population in one of our central western states a few years ago, a utility company was faced with a municipal bond election for the building of a city electric light and power plant. The utility company was practically a stranger as a company in this community. The success of the bond election meant the virtual confiscation of an investment of nearly a million dollars. The utility company made every reasonable offer to avoid the bond election and was refused by the city administration.

The registration books were checked on the day they closed and between 700 and 800 people were qualified to vote at this bond election. There were 10 employes and 80 stockholders in the town. They were called together and given a thorough understanding of the entire situation, the loss of value of this stock, the useless duplication investment, etc. The registration list was checked off until the employes and stockholders had a list of 600.

They started to work during the next few days and nights, going from house to house, meeting neighbors and friends as they were checked from the registration books, explaining to every one the facts concerning the election. Election day came and they were sure of between 500 and 600 votes against the bonds. When the election was over, the bonds had been defeated by a 5 to 1 majority—some 500 votes against the bonds and about 100 votes in favor of them.

In the telephone business in which we all are engaged, we are faced with even more perplexing problems regarding public relations methods than we have in almost any other form of public service.

The telephone on the wall or on the desk represents but about three per cent of the total investment of the telephone company. However, notwithstanding this situation, our contacts with the public are perhaps more numerous than in any other in the utility field—which places a greater responsibility upon us who are engaged in a great public service in order that we may win an enviable reputation and acquire a worthwhile standing in the communities in which we operate.

For example, the traffic department has a multitude of daily contacts with subscribers as its members open the telephone door—the information operators, the rate clerks, etc. They, however, do not make these contacts in person. The same obligation rests upon the traffic department to be ready to give accurate information about the industry, as well as upon the employes in the commercial department as they meet the public across the counter, or the plant department employes in their daily contacts.

Therefore, it is highly important that no matter in what department an employe is employed, he or she be supplied with educational literature; or by some organization work that they may be offered every inducement to improve themselves and their families. Such a program will win eventually—not a spectacular one but a practical method of gaining full appreciation of the public relations responsibility on the part of every employe.

I want to inject into these remarks some of those methods which are being used by the company with which I am associated.

The regular employes' magazine, the Lincoln Telephone News, which is published once a month, contains information only about the telephone business. This medium should be recognized as one which will keep employes posted on all phases of the business in order that they may pass the information on to the public. The house organ should constantly strive to give employes information each month which, when given to the public, will create understanding of our problems and confidence in us. It is a pleasure to an editor to know that the magazine is popular and that it is like a family letter; and that in addition to offering a moment's entertainment, it serves a worthwhile purpose.

Not every man can be a silver-tongued orator nor do we find many employes with what has been termed in popular phraseology, the "gift of gab" on a public platform. But it can hardly be conceivable that any company can be so lacking in human material that it cannot select from its personnel those who can, after some training, discourse in an interesting fashion of the work of the telephone industry.

During the past year there have been delivered by our company employes more than 150 addresses on some topic of the telephone industry before an approximate aggregate audience of 20,000 people. These audiences include employe groups as well as school and civic bodies. In this connection it is, of course, borne in mind that the person selected to make a talk has a firm grasp of the subject he is going to discuss.

We hear from time to time of the value of editorial contact. We are inclined to shift the obligation of familiarizing the editor with the telephone business upon the local manager. It has been our pleasure, as we visit exchanges, to rub elbows with editors of local newspapers. We have always found them fair and glad to have the opportunity to print news about the telephone industry. They are always willing, whenever the occasion warrants, to correct false impressions held by the uninformed, and to set forth in their columns the truth about the telephone company's problems.

However, too many times such information comes to the editor in the form of a clip sheet or a mimeographed copy, seeking a place in his columns. There is another opportunity for employe education. Why not give the manager or employes an opportunity to develop along these lines—to create their spirit of initiative with the right sort of information?

In our own organization we maintain what we call our "News-Suggestion service" which is issued from month to month, suggesting to the managers and employes that which might be of interest to newspaper editors. The results, both from an educational point of view on the part of the employe and from the public relations standpoint with the newspaper fraternity, have been most gratifying.

May I conclude my remarks regarding employe training for public relations service by quoting some of the testimony given at a rate hearing (not our own company) which should convince us of the importance of employe education, and point out the necessity of intelligent and earnest employe contact with our subscribers and the general public at all times. This testimony, as given, can be rightly determined as "Danger Signals." Medical science has discovered certain danger signals that foretell dire results if unheeded. The great railway systems of the nation have been materially helped by the installation of "block" or danger signals.

There are certain danger signals in the telephone business and it is our job, and the job of every employe, to be on the lookout for the signals, if we would successfully operate our business.

Danger Signal No. 1. "I was sent from one person to another until I had seen three clerks. None of them seemed to know anything more about the service charge than I did.

Danger Signal No. 2. "Employes of the company have no well-defined idea of what the service charge was for."

Danger Signal No. 3. "I was told over the telephone that the reason the charge was made was because the company was in need of money."

Danger Signal No. 4. "The employes tell me so many different stories about rates that I do not know which one to believe."

Danger Signal No. 5. "Labor agitation indicated that if employes were better paid the service charge would be all right."

Stop here just a moment and ask ourselves this question: Are there any of these danger signals in our organization?

Some one has said, "A man is judged by the company he keeps," and a company is judged by the employes it keeps, for in the entire history of business, from its first stages of barter and trade, no substitute has ever been discovered for customer satisfaction. If this contact is intelligent, pleasant, and courteous, the success of our business is assured.

Personal and Biographical Notes

H. G. Lankford, chief commercial agent of the Illinois Bell Telephone Co., has been appointed general commercial agent. The change was effective as of September 1. The new position was created to supplement the staff of A. R. Bone, general commercial superintendent of the Illinois Bell Telephone Co.

H. G. Lankford, of Chicago, First to Hold Newly-Created Position of General Commercial Agent, Illinois Bell Telephone Co.

The duties of Mr. Lankford will continue to include relations with the Independent telephone companies in Illinois and the Illinois Telephone Association. Mr. Lankford started in the employ of the Central Union Telephone Co. as night operator at the Petersburg, Ill., exchange. He was later appointed division commercial manager at Centralia, Ill., after which he assumed the title of agent for connecting companies.

Mr. Lankford has many friends throughout the state among those identified with the telephone industry. For the past several years he has been actively associated with the Illinois Telephone Association and is at present vice-president of that organization.

Emmett P. Platt, manager of the Dowagiac Telephone Co., has resigned as mayor of the town of Dowagiac, Mich., and has gone to Alpena to become general manager of the Onaway-Alpena Telephone Co., which has been purchased by the same interests which control the Dowagiac Telephone Co. and the Van Buren County Telephone Co.

During his 4½ years at Dowagiac, Mr. Platt successfully united the two telephone systems, removing overhead poles and wires from the business district, rebuilding the system and making improvements.

W. F. Hoyt, secretary-treasurer of the Dowagiac Telephone Co., succeeds Mr. Platt as general manager.

Chester I. Barnard, vice-president of the Bell Telephone Co. of Pennsylvania and the Delaware & Atlantic Telegraph & Telephone Co. on October 1 will become president of a new associated Bell company to be known as the New Jersey Bell Telephone Co. This company results from the consolidation of the territory which the New York Telephone Co. has operated in northern New Jersey with that of the Delaware & Atlantic Telegraph & Telephone Co. operating in the southern part of that state. Mr. Barnard is thoroughly familiar with the service requirements and operating problems of this territory.

Upon leaving Harvard, he began his telephone career in 1910 under the supervision of Walter S. Gifford, then chief statistician and now president of the American Telephone & Telegraph Co. In 1913, Mr. Barnard was made acting commercial engineer of the Bell system, later becoming commercial engineer. In 1922 he became assistant vice-president and general manager of the Bell Telephone Co. of Pennsylvania and the Delaware & Atlantic Telegraph and Telephone Co.

In 1923 he was appointed general manager of those companies and in 1925 he became vice-president and general manager with a change in title in 1926 to vice-president, which position he has held until elected to his new office.

Other staff officers of the new company include George W. McRae, now general manager of the New Jersey area, as vice-president; Frankland Briggs, attorney in charge of commission matters for the New York Telephone Co., becomes vice-president and general counsel; Harland A. Trax, chief accountant of the New York Telephone Co., is named general auditor; S. C. Ormsbee, secretary-treasurer of the Friendship Telephone Co., Syracuse, N. Y., is elected secretary-treasurer.

Mr. Barnard has announced that the plant, traffic, commercial and engineering department heads of the New Jersey area of the New York Telephone Co. will exercise the same functions in the new company. These officials are: E. H. Dyer, general commercial manager; F. E. Congdon, general plant manager; L. R. Scovill, general traffic manager, and W. G. H. Whitaker, chief engineer.

The general headquarters of the new telephone company will temporarily be at 1060 Broad street until the completion of the new 20-story building now under construction on Broad street, Newark, N. J.

There are at present in New Jersey some 550,000 Bell telephones, 121,000 of which are operated by the Delaware & Atlantic company and 329,000 by the New York Telephone Co. Under the terms of a joint petition filed by these two companies and approved by the New Jersey Public Utility Commission, the Delaware & Atlantic company will purchase all of the New Jersey holdings of the New York company and make payment with a new issue of common stock having a par value of $72,416,000.

Louis Myers, formerly accountant for the Southern New York Railway, Inc., located in Mohawk, N. Y., is general auditor of the Black River Telephone Co., Lowville, N. Y., succeeding Claude N. Hoke.

Charles C. Hobbs, for the past nine months chief accountant of the Mutual Telephone Co., Erie, Pa., has been promoted to the position of comptroller. In his new position Mr. Hobbs has the responsibilities connected with the auditing, the bookkeeping and the cashier departments.

Arthur W. Page, vice-president of the American Telephone & Telegraph Co., on September 1 became president of the Bell Telephone Securities Co. David F. Houston, who formerly was president, resigned on becoming president of the Mutual Life Insurance Co. of New York.

Mr. Page was editor of the "The

Arthur W. Page, Vice-President of A. T. & T. Co. in Charge of Public Relations, Has Been Appointed President, Bell Telephone Securities Co.

World's Work" for 13 years, resigning to enter the service of the American Telephone & Telegraph Co. the first of this year. He has charge of the public relations and publicity work of the company, and will continue to discharge these duties in addition to the new responsibilities with the Bell Telephone Securities Co.

A. L. Greenman has taken over the local managership of the Associated Telephone Co. in Three Rivers, Mich., following the resignation of C. M. McGregor who has been in charge for some time.

Mr. Greenman was in the employ of the Indiana Bell system for a number of years and later was located at Leesburg, Fla., from which place he went to Three Rivers.

W. A. Cooper, manager of the telephone exchange at Vinton, Iowa, has resigned to take a similar position with the Antelope Valley Telephone Co. of Lancaster, Cal. Mr. Cooper was with the exchange at Lancaster about ten years ago and is a booster for California.

W. G. Brorein, president of the Peninsular Telephone Co., Tampa, Fla., has returned from a six weeks' trip through the Pacific northwest, including a visit to Alaska.

E. M. Prisk, of Hazelton, Pa., vice-president and general manager of the Lehigh Telephone Co., on September 1 became vice-president and general manager of the Bell Telephone Co. of Pennsylvania for the eastern area, and vice-president and general manager of the Diamond State Telephone Co., operating the entire state of Delaware. Mr. Prisk will retain his present position with the Lehigh company, and the local management and status of this company will remain unchanged.

Edward M. Prisk has been in the telephone business 28 years. His first position was a clerk and stenographer with the People's Telephone Co. of Wilkes-Barre. After serving in various capacities he was promoted to assistant auditor of the Consolidated Telephone Companies. In 1910 he was made general auditor and ultimately became assistant general manager of the organization.

From 1910 to 1913 Mr. Prisk held the position of general auditor for The Consolidated Telephone Co. of Pennsylvania and The American Union Telephone Co., the latter company controlling 19 separate companies operating in five different states.

The newly-organized Consolidated Telephone Co. next called him, and in 1913 he became its vice-president and general manager. When The Lehigh Telephone Co. was created in 1924 he became vice-president and general manager of the organization, and he retains that position in addition to his new duties.

Mr. Prisk will find it necessary to establish his headquarters at Philadelphia, but by means of frequent visits to Hazelton will be able to maintain his numerous business and social contacts.

Mr. Prisk has many friends in the Independent field, having served as director of the United States Independent Telephone Association several years ago. He also has been active in the Pennsylvania State Telephone & Traffic Association as a director.

John Z. Miller, secretary and general manager of the Mutual Telephone Co., Erie, Pa., with his family enjoyed a vacation trip last month to Nova Scotia, Newfoundland and Labrador, taking in the points of historic interest.

Obituary.

Henry L. Rozier, 78 years old, a banker and capitalist of Sainte Genevieve,, Mo., and a grandson of one of the founders of that historic Missouri town, died August 12 of cancer after a two years' illness.

Mr. Rozier, with an associate, John Tlapek of St. Marys, built the local telephone exchange and superintended the construction of the first toll line into St. Louis in 1902. He first started his business career in a store founded by his grandfather, later organized a private bank.

In 1904, Mr. Rozier purchased a large interest in the Cape Girardeau Bell Telephone Co., of which he was president at the time of his death.

James A. Wotton, an old resident of Atlanta, Ga., and the first chief engineer of the Southern Bell Telephone & Telegraph Co., passed away August 22, at his home in Montclair, N. J.

After graduating from the University of Georgia he entered the telephone business and was one of the few early remaining pioneers of the telephone business in Atlanta, Ga.

His inventions in the field of communication were numerous and important and for some years at his home in Atlanta, he conducted a manufactory for telephone apparatus.

Of late years Mr. Wotton had been a member of the staff of the Bell Telephone Laboratories in New York.

What the Commissions Are Doing

Up-to-the-Minute News Regarding the Activities of State and Interstate Commissions, Courts and City Councils in Matters Concerning Telephone Companies—Summary of Commission Orders and Schedule of Telephone Hearings

Southwest Telephone Co. Authorized to Issue Bonds.

The Arkansas Railroad Commission has granted the Southwest Telephone Co., Stuttgart, authority to issue first mortgage bonds from time to time, not to exceed $900,000. The Southwest company operates exchanges at Stuttgart, England, DeWitt and other towns in Arkansas.

S. A. Lane, president of the company, who also is general manager for the Southwestern Bell Telephone Co. in Arkansas, said that authority to issue the bonds was sought that the company may acquire some exchanges in Oklahoma and Texas. He said that the full amount of bonds authorized will not be issued at this time.

California Commission Strong for Conferences on Utility Matters.

In its efforts to bring up the telephone service in the state to the highest possible standard, the California Railroad Commission frequently conducts investigations, and arranges conferences with the utilities, or with individual telephone users, or representative organizations, and receives requests for assistance in matters relating to telephone service.

Such requests are thoroughly investigated and studied by the telephone and telegraph division of the commission's engineering department. Informal meetings held at the place from which the request comes, permit of a fuller understanding of utility matters in general, and of the local telephone situation in particular, and invariably result in improved service.

When it is understood that there are approximately 141 telephone utilities operating in the state of California, and that the number of telephones connected for the service of organizations calling on the commission for assistance, varies from a half-dozen to approximately a million (as in the case of The Pacific Telephone & Telegraph Co.) one may realize the magnitude of the job which the commission's telephone engineers have before them.

A meeting for informal discussion of certain important telephone matters in the Santa Monica Bay district of Los Angeles county was held in the offices of the Venice branch of the Los Angeles Chamber of Commerce on September 7. Arthur B. Fry, telephone and telegraph engineer, and F. V. Rhodes, assistant telephone and telegraph engineer, represented the railroad commission. This meeting was arranged upon request of the Venice branch of the Chamber of Commerce of Los Angeles. It is understood that the Sawtelle branch of the same body has problems similar to those which the Venice branch desired to place before the commission's engineers, and the Sawtelle body

had representatives present at the meeting.

It is worthy of notice that there was a reduction in informal complaints (consumer complaints) from 978 during the fiscal year ending June 30, 1926, to 652, for the fiscal year ending June 30, 1927, and that the number of complaints has steadily decreased since the fiscal year of 1923-24, when there were 3,736 complaints, practically all of which related to service or installations, extensions and cancellations.

Exchange Building Not Yet in Use Held "Operative Property."

A building constructed by a telephone company for use as an exchange headquarters is "operative property" even before it is connected up with the telephone lines, Superior Judge Leon Yankwich of Los Angeles, Calif., ruled late last month in deciding a suit brought by the Southern California Telephone Co. against the county of Los Angeles.

The building in question was assessed by the county for taxes. It had not been connected with the lines at the assessment date. The company contended, nevertheless, that it was "operative property" and therefore, taxable only by the state. Judge Yankwich held with the company and by judgment relieved it of $71,000 of its annual tax bill.

Ask Full Commission Hearing on Pacific T. & T. Application.

The California Railroad Commission has received a petition from John Francis Neylan, Grove J. Fink and John B. Costello, attorneys who have entered formal appearance before the commission in the matter of the application of the Pacific Telephone & Telegraph Co. for authority to revise its exchange areas in the San Francisco and East Bay territories, and to increase rates, in which the petitioners ask the commission to hear the application of the company en banc.

It is asserted in the petition that the proceeding is of sufficient importance to warrant a hearing before the full membership of the commission. The matter is scheduled for hearing before Commissioner Ezra W. Decoto on September 20.

Indiana Commission Approves Purchases and Bond Issues.

Purchase of five southern Indiana telephone companies by the Southern Indiana Telephone & Telegraph Co. for $1,600,000 was approved last week by the Indiana Public Service Commission, after the commission had slashed $500,000 from the combined valuation.

The five companies in the deal are the Madison Telephone Co. of Madison, New Washington Telephone Co. of New Washington, Clark County Telephone Co. of Clark County, the Dubois County Telephone Co. of Dubois county, and the English Telephone Co. of English, Ind.

Commissioner Howell Ellis, who heard the case, wrote in the order that the engineers of the commission and its accounting department could not substantiate the petitioners' valuation of the five counties at the higher figure. Opposition to the deal developed during the hearing when residents of Dubois county said they were opposed to the transaction at any price.

Authority was given to issue $1,000,000 in first mortgage bonds, 4,000 shares of common and 2,000 shares of preferred stock.

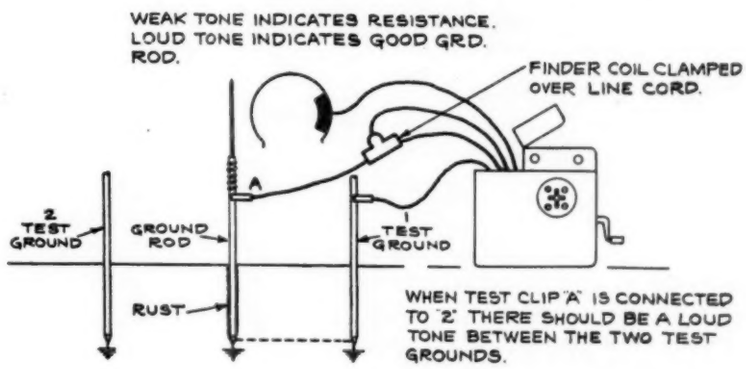
At the same time the Wabash Valley Telephone Co. was authorized to issue $6,000 in bonds and the Southern Indiana Telephone Co. was authorized to issue $65,000 in first mortgage bonds for retiring real estate mortgage and short-time notes and to redeeem 400 shares of preferred stock.

Missouri Commission Authorizes Sales of Several Properties.

The Missouri Public Service Commission has authorized the transfer of the Linneus Telephone Co., the Browning Telephone Co., the Meadville Telephone Co., the Callao Telephone Co., the Atlanta Telephone Co. and the Hunnewell Telephone Co., to E. C. Hunt of Blair, Neb.

The property of the Linneus Telephone Co., operating at Linneus, the Browning Telephone Co., located at Browning, and the Meadville Telephone Co., Meadville,

Method of Locating A Poor Ground Rod


WEAK TONE INDICATES RESISTANCE.
LOUD TONE INDICATES GOOD GRD. ROD.
FINDER COIL CLAMPED OVER LINE CORD.
A
2 TEST GROUND
GROUND ROD
1 TEST GROUND
RUST
WHEN TEST CLIP 'A' IS CONNECTED TO '2' THERE SHOULD BE A LOUD TONE BETWEEN THE TWO TEST GROUNDS.

In looking for poor ground connections, drive two test rods near to the ground rods to be tested. Connect the West Test Set to these two test rods and the tone heard will be of maximum volume. Then connect as shown in the illustration and test. If the tone is of equal volume to the first test, the ground connection is good. A weaker tone will indicate a poor ground.

The West Test Set makes all tests with accuracy and speed. The saving of time and labor soon repays the original cost.

West Bulletin illustrates and describes all the tests possible with this device.

American Electric Company, Inc.

State and 64th Streets
Chicago, U. S. A.

Licensee and Distributor of

The West Test Set

Mentioning TELEPHONY makes it a better paper.

together with all franchise rights and contracts in connection with the operation of the systems, were sold for $51,000.

The Callao Telephone Co., Callao, was sold at an agreed price of $16,500; the Atlanta Telephone Co., Atlanta, for $16,000, and the Hunnewell Telephone Co., Hunnewell, for $6,000.

Where Highway Poles Are Placed on Abutting Land.

Where an electric company erected poles along the county highway on the land of an abutting owner without her consent, the owner was not restricted to action for damages, but could sue to compel removal of the pole. The company's position was not strengthened by a mutual mistake as to the limits of the highway. This was the holding of the Maryland Court of Appeals in the case of the Potomac electric Power Co. vs. Wall on June 8.

The owner of property along a county highway removed a fence which marked the understood boundary and planted a hedge 2½ feet inside of it so as to allow for spreading. The electric company, a few years later, erected 14 poles close to the hedge without requesting the plaintiff's permission, the company's foreman telling her that the road was 30 feet wide, and that the hedge was on the county line. This was on the supposition that the road area had a legal of 30 feet, and that its boundary could be ascertained by measuring 15 feet from the middle of the traveled way.

The owner of the property sued for a mandatory injunction to compel the removal of the poles. The power company contended that the poles were located on the margin of the road where it had a franchise to erect and maintain them; that the plaintiff had no right to require their removal but was limited to the recovery of damages; that no damages, however, were sustained; that the poles were erected with plaintiff's "permission and license." It was admitted that the plaintiff subsequently requested their removal.

The lower court found that the poles were on the plaintff's land beyond the proved limits of the public roadway, and ordered their removal and this judgment was affirmed by the court of appeals.

The court held that there was no evidence that the road in question was ever intended to be 30 feet wide by dedication or formal acceptance and it was shown that the poles were erected beyond the limits of the road as established by the fences which defined its width for a period extending into the remote past.

"Apart from the question as to the proper width of the road, the portion on which the defendant has planted its poles is proved without dispute to be within the limits of the plaintiff's land, and she is undoubtedly the owner of the soil over which it is used," the court stated and continued:

"The public highway easement to which the land is subject does not entitle the defendant to impose upon it an additional servitude against the plaintiff's objection and without resort to the power of eminent domain. The construction of the defendant's line of poles and wires along the margin of the roadway subjects the plaintiff's land to a burden which is independent of the highway easement exercised by the public.

"No authority to take the plaintiff's property for the defendant's corporate objects is conferred by its franchise to construct its lines upon the highway of the county. Nor does the existence of such a franchise restrict the assertion of the land owner's rights to an action at law for damages."

The court said that even if plaintiff had given express permission to the defendant to erect poles on her land, the license thus gratuitously conferred would not be irrevocable.

Complaint Filed Against Company at Kearney, Neb.

The Union Valley Telephone Co. of Kearney has filed with the Nebraska State Railway Commission a complaint against the Kearney Telephone Co., alleging that the latter has been invading and trespassing upon the rural territory served by the former, which has no city service.

President Warren Pratt of the Kearney company has replied by saying that the service supplied by his exchanges is far superior to that of the complainant and that for this reason some of the latter's subscribers have asked for service. He says that the company is not soliciting any business from the subscribers of the Union Valley, and that it has taken over no new business except where the rural company has heretofore "purposely parallelled our lines that had been constructed and operated long before they entered the telephone field."

Companies Authorized to Charge Extra for Monophone.

Forty-eight Nebraska telephone companies have been given permission, on an application filed by Secretary George M. Kloidy of the Nebraska Telephone Association to the state railway commission, to add to their schedule of charges, 50 cents a month for the cradle or European type of receiver, also known as the monophone. The commission says that it has approved this charge for the Northwestern Bell Telephone Co. and the Lincoln Telephone & Telegraph Co.; that it is apparently a reasonable rate for the special service and justified by the high cost of maintenance.

The following companies were granted such authority: Chappell, Wynot, Hickman, Callaway, Pierce, Crete, Frontier of Hubbell, Lynch, Lindsay, Bassett-Springview of Bassett, Platte Valley of Scotts-

LONDON, ENG.
TELEPHONE EXCHANGES
IN WHICH
ALTON BATTERIES
UP TO
6,000 AMPERE HOURS CAPACITY
ARE AT WORK, INCLUDE:—
LONDON WALL
KENSINGTON
PADDINGTON
VICTORIA
NEW CROSS
WATERLOO
GERRARD
MUSEUM
PARK
etc., etc., etc., etc.
FOR IMPORTANT DUTIES
SPECIFY ALTON
ALTON THE BATTERY COMPANY LTD ALTON HANTS

Atlanta
Baltimore
Boston
Buffalo
Chicago
Cincinnati
Cleveland
Dallas
Detroit
Indianapolis
Kansas City
Los Angeles
Milwaukee
Minneapolis
New Orleans
New York
Philadelphia
Pittsburgh
San Francisco
St. Louis
Syracuse
Seattle
Washington, D. C.
Berlin, Germany

Investigations Reports
Valuations
The American Appraisal Company
A National Organization

Mentioning TELEPHONY makes it a better paper.

bluff, with eleven exchanges, Imperial, Arapahoe, Cumings County Independent of Wisner, Brady, Ainsworth, Oakdale, Farmers of Alexandria, Arlington, Buffalo County of Pleasanton, Stella, Miller, Dundy County Mutual of Benkleman, Crownover, Constock, Lawrence, Magnet, Eustis, Pawnee, Osmond.

Gage County Independent of Blue Springs, Union of Wausa, Beaver Valley of Dambury, Sutherland, Eagle, Ohiowa, Dubois, Battle Creek, Madison, Havana of Indianola, Kearney, Farmers & Merchants of Concord, Palisade, Platte County Independent of Columbus, Monroe, Farmers of Ord, Central of Greeley and Cortland.

Company at Nelson, Neb., Applies for Increased Rates.

The Nuckolls County Independent Telephone Co., of Nelson, has applied to the Nebraska State Railway Commission for authority to amend its original application for an increase of rates at the exchange of Hardy, which it recently purchased from a local company, to meet an annual expenditure of $5,530.

The company is engaged in a building program and says the present rates are inadequate. It asks authority to charge $2 net for individual business, metallic; $1.40 for individual residence, metallic; $1.30 for individual residence, gounded; $1.25 for party line residence; $1.50 for rural, metallic, and $1.40 for grounded.

Summary of Commission Rulings and Schedule of Hearings.

INTERSTATE COMMERCE COMMISSION.

August 24: Southern Bell Telephone & Telegraph Co. and the Demopolis Telephone Co. filed joint petition for authority for the purchase by the former of the telephone properties of the latter at Demopolis, Ala., for $50,200.

September 3: Authority to acquire Huntingdon & Clearfield Telephone Co. for $550,000 and the Summerville Telephone Co. for $400,000 asked by the Bell Telephone Co. of Pennsylvania.

ARKANSAS.

August 31: Southwest Telephone Co., of Stuttgart, granted authority to issue first mortgage bonds not to exceed $900,000, so that the company may acquire exchanges in Oklahoma and Texas.

CALIFORNIA.

September 20: Hearing before Commissioner Ezra W. Decoto in the matter of the application of the Pacific Telephone & Telegraph Co. for authority to revise its exchange areas in the San Francisco and East Bay territories, and to increase rates.

ILLINOIS.

August 31: Illinois Bell Telephone Co. filed application to reinstate the "time of day" service in Chicago. Service, if approved, is to be available 24 hours a day at a charge of 5 cents, the usual rate for any local call.

September 7: Hearing at Springfield before Commissioner Kuhn in the matter of the proposed advance in rates of the Industry Telephone Co. for service in Industry, Littleton, Brooklyn and vicinities, stated in rate schedule Ill. C. C. No. 2, of the company.

September 7: Hearing at Springfield before Commissioner W. J. Smith in the matter of the proposed advance in rates of the Plainville Telephone Exchange for service in Plainville, Adams county, stated in rate schedule Ill. C. C. No. 3 of the company.

September 8: Hearing at Springfield before Chairman D. H. Jackson in the matter of the proposed rates of the C. T. & N. Telephone Co. for toll service in Neoga and vicinity, stated in rate schedule Ill. C. C. No. 1 of the company.

INDIANA.

July 15: Johnson County Telephone Co. authorized to purchase the property formerly operated by the Whiteland Telephone Co. now owned by Pierre E. Goodrich; also authorized to issue 3,500 shares of its common stock of no par value for the purpose of the purchase and sale.

August 30: Southern Indiana Telephone & Telegraph Co. authorized to purchase five Souhern Indiana companies for $1,600,000. Authority was also given to issue $1,000,000 first mortgage bonds, 4,000 shares of common and 2,000 of preferred stock.

August 30: Wabash Valley Telephone Co., of Williamsport, given authority to issue $6,000 in bonds.

August 30: Southern Indiana Telephone Co., of Aurora, authorized to issue $65,000 in first mortgage bonds for retiring real estate mortgage and short time notes and to redeem 400 shares of preferred stock.

MISSOURI.

August 31: Applications granted of E. C. Hunt to purchase the Linneus Telephone Co., Browning Telephone Co. and Meadville Telephone Co.; the Callao Telephone Co., the Atlanta Telephone Co. and the Hunnewell Telephone Co.

NEBRASKA.

August 30: In the matter of the appli-

For Maximum Service—Baker Contact Points

DEPENDABILITY and long life are the two essentials in a contact point. This "heart of the machine" should function evenly and steadily over long periods of time—it should not need replacement at frequent intervals.

Baker Contact Points are made with this principle always in mind and the name "Baker" assures that perfect performance, without constant renewal, which is the outstanding characteristic of a *good* contact point. Our contacts are made of Platinum, Iridio-Platinum, Silver and Special Alloys. There are sizes and types for all purposes.

BAKER & CO., INC.
54 Austin St., Newark, N. J.
NEW YORK CHICAGO

ASSOCIATED TELEPHONE and TELEGRAPH COMPANY

KANSAS CITY NEW YORK

AUTHORIZED CAPITAL
$18,000,000
PAID-IN CAPITAL AND SURPLUS
$3,500,000

THE ASSOCIATED TELEPHONE AND TELEGRAPH COMPANY, which is owned by British and American Interests, undertakes outside of United States of America:

1. Engineering, Construction, Management and Operation of complete Telephone Installations.
2. The Examination, Negotiation and Acquisition of Telephone Concessions.
3. Financing Telephone Operating Properties, or Extensions to Existing Plant.

THE ASSOCIATED TELEPHONE AND TELEGRAPH COMPANY and its Allied Companies own and manage directly or indirectly upwards of 300,000 Telephones, and are connected with important British and other Manufacturing and Financial Interests throughout the World.

Bankers in London
Westminster Bank Limited **Guaranty Trust Company**
Bankers in U. S. A.
Commerce Trust Company, Kansas City, U. S. A.
Harris Trust and Savings Bank, Chicago, U. S. A.
London Consulting Engineers: W. W. Cook & Partners
Winchester House, Old Broad Street, London, E.C. 2
London Financial Agents: Theodore Gary and Company, London
Stafford House, Norfolk Street, Strand, London, W.C. 2

Mentioning TELEPHONY makes it a better paper.

Valuation—Supervision—Plant—Inductive Interference
Expert Administrative Council for Utilities
JAY G. MITCHELL
TELEPHONE ENGINEER
Member A. I. E. E.
Member W. S. E.
1411 South Park Ave. Springfield, Ill.

Frank F. Fowle & Co.
Electrical and Mechanical
ENGINEERS
Monadnock Building CHICAGO

CONSULTING
Telephone Engineer
GARRISON BABCOCK
1107 White Building
SEATTLE - WASHINGTON

J. K. JOHNSTON
TELEPHONE
JJK
ENGINEER
INDIANAPOLIS
During recent years I have been privileged to appraise Telephone Exchanges all over the United States. The list totals 530. Would you like to avail yourself of my services?
908-4 Lemcke Building

W. C. POLK
CONSULTING TELEPHONE ENGINEER
Plans, Estimates and Reports,
Appraisal and Supervision
Can arrange a moderate amount of financing
Telephone Building Kansas City, Mo.

W. H. CRUMB
Telephone Engineer
9 South Clinton St. Chicago

Victor
Telephone Cells

J. G. WRAY & CO.
Telephone Engineers
Specialists in Appraisals, Rate Surveys, Financial Investigations, Organization, and Operation of Telephone Companies.
J. G. Wray, Fellow A. I. E. E.
Cyrus G. Hill
576 First National Bank Bldg., Chicago

B-B. & H. Cotton Duck Window Shades
Adjustable or Stationary
Just the thing for telephone offices
Write for Catalog and Prices
The B-B. & H. Shade Co.
Edwardsville, Ill.

cation of listed telephone companies for authority to charge 50 cents a month extra for the monophone or European type of receiver, where demanded, it is found that the rate asked for is reasonable, and the same as other companies are charging; application granted.

August 30: Complaint filed by Union Valley Telephone Co. of Kearney, alleging that Kearney Telephone Co. is encroaching upon its rural territory.

August 31: Application filed by Osmond Telephone Co. for authority to charge increased schedules of rates.

August 31: Amended application filed by Nuckolls County Independent Telephone Co., of Nelson, for authority to publish new and increased schedule of rates at Hardy exchange, recently purchased and now being rebuilt.

September 1: Objections filed by certain named directors of the Bartley Mutual Telephone Co. alleging that officers had no legal authority to ask commission for recent order authorizing the charging of gross and net rates.

September 2: Application filed by the Northwestern Bell Telephone Co. for authority to close toll station located in First State Bank of Bazile Mills, which has been taken over by guaranty fund commission and which desires removal; alleging that sufficient message facilities are furnished by rural lines from Winnetoon and Creighton, and that revenues are entirely insufficient.

NEW YORK.

August 30: The village of Canajoharie filed a complaint over new rates of Glen Telephone Co. which became effective on August 1. The village alleges that the new rates are unjust, unreasonable, unduly discriminating and unduly preferential. The village also asked that the new rates be suspended by the commission pending a hearing.

NORTH DAKOTA.

August 2: Parker Telephone Co., Inkster, filed application for authority to issue 140 shares of common stock.

August 12: Northwestern Bell Telephone Co. filed additional sheets to general supplemental rate schedule in re supplemental equipment and extension of service stations.

August 16: Williams County Mutual Telephone Co., Ray, granted authority to issue and sell six shares of common stock.

August 29: Joint application of John O'Keefe, owner of the Cavalier Telephone Co., and C. G. Hilliard to sell and buy, respectively, the telephone property in Cavalier, granted.

August 29: C. G. Hilliard, owner of the Cavalier Telephone Co. granted authority to place a $10,000 mortgage upon the telephone property in Cavalier.

OHIO.

August 26: Application for a motion for a rehearing in the matter of a rate increase granted the Marion County Telephone Co., Marion. City contends that the company failed to sustain the valuation as fixed by the commission and that the commission erred in adopting, with only one exception, the valuation as fixed by the appraising engineers without any regard to evidence in the record.

OKLAHOMA.

August 23: Hearing on application filed by the Vinson Telephone Co., Vinson, for authority to increase rates.

VIRGINIA.

November 1: Hearing on the rate revision petition of the Page County Farmers' Mutual Telephone Co. The proposed schedule of rates will be suspended, an order having been issued to that effect.

We will sell your
Telephone Directory
ADVERTISING
or will publish your directory complete
L. M. BERRY & CO. DAYTON, OHIO

ACCOUNTING!
Specialization on Public Utility Accounting Records and Audits enables us to best serve Telephone Companies.
HERDRICH AND BOGGS
Certified Public Accountants
1014 Merchants Bank Bldg., Indianapolis, Ind.

JAMES R. KEARNEY
CORPORATION
Solderless Service Connectors
Certified Malleable Anchors
Guy Wire Clips
Cable Ring Saddles
4229 Clayton Avenue St. Louis, Mo.

GUSTAV HIRSCH
Consulting Engineer
In all branches of Telephone Engineering, Rate Cases, Appraisals, Financial Investigations, Inspections and Reports
COLUMBUS - OHIO

as low as $18.00 at Chicago
5 Times Faster, "Typewriters" Names, Addresses and rates on bills 500 to 1000 and hour. FREE TRIAL. Easy Terms.
Addressograph
906 W. Van Buren St. Chicago, Ill.

Universal Insulators
will support your drop wires to your entire satisfaction and at a minimum cost. Are you a user? Sample free on request
Universal Specialty Co.
116 So. Seventh Street
Terre Haute, Ind.

DIRECTORIES
We publish your Directories FREE of CHARGE and pay you from 3 to 10 cents per name for your subscribers' list.
Also furnish stationery
WESTERN ADV. CO.
1284 GARFIELD AVE. TOPEKA, KAN.

NAUGLE POLES
Northern and Western Cedar
Butt-treated or Plain
NAUGLE POLE & TIE CO.
59 East Madison St., Chicago

American Electric
TELEPHONES
SWITCHBOARDS and SUPPLIES
Carried in Stock by
Northwest General Electric Supply Company
St. Paul Duluth Minneapolis Fargo